CONTENTS

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092www.sconinfra.com info@sconinfra.com

INTRODUCTION
&
COMPANY PROFILE
OF
SCON INFRA PRESTRESS LLP

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092

www.sconinfra.com info@sconinfra.com

SCON INFRASTRUCTURE formed in June – 2010, are in Business of Infrastructure Sector in India.The Key Persons of SCON have 10 to 15 Years of Work Experience in the field of Post Tension, Rehabilitation, Bridge Bearings,Expansion Joints, and was associated with Company like Sanfield (WABO) & Freyssinet.

Familiar and known to all the leading Consultants e.g. Sritec, Mahimtura, SPAN, CES, STUP, TANDONS, Lewis Berger, Scot Wilson etc. and major Contractors EWL, HCC, GAMMON, L&T-ECC, AFCONS, NCC, etc.

Strength of "SCON"

Strength of any company depends on both fixed & growing assets. SCON is enriched by both.

In Term of fixed assets we have a new factory at Babosa Industry Location with vast experience in the field, good relations with Government Bodies Like NHAI, MORTH, NPCIL, BHEL & other Infrastructure governing bodies.

In Term of Growing assets we are having our team of Design Engineers, Project & Production personals guided by the Management. They are the most precious & valuable assets for SCON.

Growing assets of "SCON"

Mr.**Umesh Bhujbalrao** **(**CEO)
Qualification : Diploma in Civil Engineering

Experience: Total experience of 18 years in Freyssinet India and Sanfield India Ltd Expert in Pre stressing , handled the Pre stressing manufacturing Unit of Freyssinet India, Handled various prestigious Prestressing Sites like HCC, Rajasthan Atomic Power Project, Gammon India .JJ Hospital, DMRC ,Delhi ,etc. Handled the Western Zone of Sanfield India Ltd for marketing and execution of Pre stressing Project (PT Slab and Rock Anchor) and Repairs and rehabilitation ,(Replacement of Expansion Joints of BMC Bridges in Mumbai)

Mr.**Vaibhav Parab** **(**CEO)
Qualification : B.E.Civil (Honours), LCSE

Experience : Total Experience of 14 years in Freyssinet India and Sanfield (India) Ltd. Handled Prestressing Sites of Bridges and Buildings ,Manufacturing Unit and Testing Set up of Freyssinet India, Repairs & Rehabilitation of Bridges and Heavy Lifting of Bridge Superstructure and Chimney. PT Slab and Rock Anchors – First project in Mumbai at Utsav Apartments Juhu handled Developed the pre stressing systems for PT Slab and Bridges and managed and trained the team of Engineers and Technicians to execute PT Slab projects.

We are in the field of

Pre Stressed Slabs.

Rock Anchoring.

Architectural Expansion Joints.

Rehabilitation of Bridge Expansion joints

Bridge Bearings.

Structural Expansion Joints.

Acknowledgement of

MORTH

Empanelment Submission

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

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Government eProcurement System

eProcurement System Government of India

Bid Acknowledgement

Date : 10-May-2018 07:28 PM

Print

Bid Acknowledgement

Organisation Chain :	Ministry of Road Transport and Highways||Special Project Zone(SPZ)-Delhi - MoRTH
Tender Ref No. :	RW/NH 34054/01/2018 SandR(PandB)
Tender ID :	2018_MoRTH_311695_1
Tender Title :	RW/NH 34054/01/2018 SandR(PandB)
Bid Start Date & Time :	26-Feb-2018 04:50 PM
Bid End Date & Time :	11-May-2018 03:00 PM
Bid ID :	1131898
Bidder Name :	SCON Infrastructure
Bid Submitted Date & Time :	10-May-2018 07:28 PM
Bidder IP Address:	103.249.132.77

Thanks

Tender Inviting Authority

Government eProcurement System

eProcurement System Government of India

Tender Details

Date : 10-May-2018 07:08 PM

Print

Basic Details

Organisation Chain	Ministry of Road Transport and Highways||Special Project Zone(SPZ)-Delhi - MoRTH		
Tender Reference Number	RW/NH 34054/01/2018 SandR(PandB)		
Tender ID	2018_MoRTH_311695_1		
Tender Type	EOI	**Form of contract**	Supply
Tender Category	Goods	**No. of Covers**	1
General Technical Evaluation Allowed	No	**ItemWise Technical Evaluation Allowed**	No
Payment Mode	Offline	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No		

Payment Instruments

Offline	S.No	Instrument Type
	1	Demand Draft

Cover Details, No. Of Covers - 1

Cover No	Cover	Document Type	Description
1	Fee/PreQual/Technical/Finance	.rar	Technical documents
		.pdf	POA
		.pdf	DD

Tender Fee Details, [Total Fee in ₹ * - 15,000]

Tender Fee in ₹	15,000		
Fee Payable To	pay and accounts officer Morth	**Fee Payable At**	New Delhi
Tender Fee Exemption Allowed	Yes		

EMD Fee Details

EMD Amount in ₹	0.00	**EMD Exemption Allowed**	No
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	Nil	**EMD Payable At**	Nil

Work /Item(s)

Title	RW/NH 34054/01/2018 SandR(PandB)				
Work Description	APPLICATION FOR EMPANELMENT OF MANUFACTURING FIRMS / AUTHORIZED SUPPLIERS OF EXPANSION JOINTS FOR BRIDGES ON NATIONAL HIGHWAYS AND OTHER CENTRALLY SPONSORED SCHEMES .				
Pre Qualification Details	Please refer Tender documents.				
Independent External Monitor	NA				
Tender Value in ₹	0.00	**Product Category**	Civil Construction Goods	**Sub category**	NA
Contract Type	Empanelment	**Bid Validity(Days)**	120	**Period Of Work (Days)**	1095
Location	new delhi	**Pincode**	110001	**Pre Bid Meeting Place**	New Delhi
Pre Bid Meeting Address	Transport Bhawan	**Pre Bid Meeting Date**	13-Mar-2018 11:00 AM	**Bid Opening Place**	New Delhi Transport Bhawan

Critical Dates

Publish Date	26-Feb-2018 04:45 PM	**Bid Opening Date**	14-May-2018 03:00 PM
Document Download / Sale Start Date	26-Feb-2018 04:45 PM	**Document Download / Sale End Date**	11-May-2018 03:00 PM
Clarification Start Date	NA	**Clarification End Date**	NA
Bid Submission Start Date	26-Feb-2018 04:50 PM	**Bid Submission End Date**	11-May-2018 03:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	NIT	289.17

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	EmpanelmentofExpensionJoint.pdf	EMPANELMENT OF Expansion Joint	543.76

Latest Corrigendum List

S.No	Corrigendum Title	Corrigendum Type	View
1	Corrigendum	Date	

Tender Inviting Authority

Name	SE S and R P and B
Address	Transport Bhawan

Government eProcurement System

eProcurement System Government of India

Bidder Enrollment Acknowledgement

Date : 10-May-2018 06:34 PM

Print

Login ID :	account@sconinfra.com
User Type :	Corporate Tenderer

Company Details

Company Name :	SCON Infrastructure
Registration Number :	MU00004704
Registered Address :	SHOP NO.17, GORAI MATRUASHISH CHS LTD, OPP AZARA BANK GORAI-II, BORIVALI WEST MUMBAI - 400092
Name of Partners / Directors :	MR. VAIBHAV PARAB MR UMESH BHUJBALRAO MR. ABHIJIT JADHAV MR SANDESH BHOIR MR SWAPNIL KAMERKAR MR. SAURAV BHUJBALRAO
City :	MUMBAI
State :	Maharashtra
Postal Code :	400092
PAN/TAN Number :	ACIFS5757J
Company's Establishment Year :	2013
Company's Nature of Business :	EXPANSION JOINT
Company's Legal Status :	Partnership
Company Category :	Small Unit as per MSME

Contact Details

Title :	Mr
Contact Name :	ABHIJIT JADHAV
DOB (Date Of Birth) :	28-Dec-1985
Correspondence Email :	abhijit@sconinfra.com
Designation :	PARTNER
Phone :	91 22 65103833
Mobile :	9503000278

Bidder Pre Registration Details

Bidder Pre Registered With :	MSME Registration
Organisation Type :	Partnership
Udyog Aadhaar Number :	449543948119
Bidder Registered Type :	Corporate

Government eProcurement System

eProcurement System Government of India

Bid Acknowledgement

Date : 10-May-2018 07:32 PM

Print

Bid Acknowledgement

Organisation Chain :	Ministry of Road Transport and Highways||Special Project Zone(SPZ)-Delhi - MoRTH
Tender Ref No. :	RW/NH 34054/01/2018 SandR(PandB)
Tender ID :	2018_MoRTH_311695_1
Tender Title :	RW/NH 34054/01/2018 SandR(PandB)
Bid Start Date & Time :	26-Feb-2018 04:50 PM
Bid End Date & Time :	11-May-2018 03:00 PM
Bid ID :	1087704
Bidder Name :	SCON INFRASTRUCTURE
Bid Submitted Date & Time :	10-May-2018 07:32 PM
Bidder IP Address:	103.249.132.77

Thanks

Tender Inviting Authority

Government ePROCUREMENT System

eProcurement System Government of India

Bidder Enrollment Acknowledgement

Date : 06-Apr-2018 11:41 AM

Print

Login ID :	info@sconinfra.com
User Type :	Corporate Tenderer

Company Details

Company Name :	SCON INFRASTRUCTURE
Registration Number :	MU000004704
Registered Address :	SHOP NO. 17 GORAI MATRUASHISH CHS LTD, OPP AZARA BANK GORAI-II, BORIVALI WEST, MUMBAI-400092
Name of Partners / Directors :	MR. VAIBHAV PARAB MR. UMESH BHUJBALRAO MR. ABHIJIT JADHAV MR.SANDESH BHOIR MR. SWAPNIL KAMERKAR MR. SAURAV BHUJBALRAO
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State :	Maharashtra
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Company's Nature of Business :	EXPANSION JOINT
Company's Legal Status :	Partnership
Company Category :	Small Unit as per MSME

Contact Details

Title :	Mr
Contact Name :	ABHIJIT JADHAV
DOB (Date Of Birth) :	28-Dec-1985
Correspondence Email :	abhijit@sconinfra.com
Designation :	PARTNER
Phone :	91 22 65103833
Mobile :	9503000278

Bidder Pre Registration Details

Bidder Pre Registered With :	MSME Registration
Organisation Type :	Partnership
Udyog Aadhaar Number :	449543948119
Bidder Registered Type :	Corporate

Government ePROCUREMENT System

eProcurement System Government of India

Tender Details

Date : 06-Apr-2018 04:04 PM

Print

Basic Details

Organisation Chain	Ministry of Road Transport and Highways||Special Project Zone(SPZ)-Delhi - MoRTH		
Tender Reference Number	RW/NH 34054/01/2018 SandR(PandB)		
Tender ID	2018_MoRTH_311695_1		
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Tender Category	Goods	**No. of Covers**	1
General Technical Evaluation Allowed	No	**ItemWise Technical Evaluation Allowed**	No
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Is Multi Currency Allowed For Fee	No		

Payment Instruments

Offline	S.No	Instrument Type
	1	Demand Draft

Cover Details, No. Of Covers - 1

Cover No	Cover	Document Type	Description
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		.pdf	POA
		.pdf	DD

Tender Fee Details, [Total Fee in ₹ * - 15,000]

Tender Fee in ₹	15,000		
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Tender Fee Exemption Allowed	Yes		

EMD Fee Details

EMD Amount in ₹	0.00	**EMD Exemption Allowed**	No
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	Nil	**EMD Payable At**	Nil

Work /Item(s)

Title	RW/NH 34054/01/2018 SandR(PandB)				
Work Description	APPLICATION FOR EMPANELMENT OF MANUFACTURING FIRMS / AUTHORIZED SUPPLIERS OF EXPANSION JOINTS FOR BRIDGES ON NATIONAL HIGHWAYS AND OTHER CENTRALLY SPONSORED SCHEMES				
Pre Qualification Details	Please refer Tender documents.				
Independent External Monitor	NA				
Tender Value in ₹	0.00	**Product Category**	Civil Construction Goods	**Sub category**	NA
Contract Type	Empanelment	**Bid Validity(Days)**	120	**Period Of Work (Days)**	1095
Location	new delhi	**Pincode**	110001	**Pre Bid Meeting Place**	New Delhi
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Critical Dates

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Document Download / Sale Start Date	26-Feb-2018 04:45 PM	**Document Download / Sale End Date**	12-Apr-2018 03:00 PM
Clarification Start Date	NA	**Clarification End Date**	NA
Bid Submission Start Date	26-Feb-2018 04:50 PM	**Bid Submission End Date**	12-Apr-2018 03:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	NIT	289.17

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	EmpanelmentofExpensionJoint.pdf	EMPANELMENT OF Expansion Joint	543.76

Tender Inviting Authority

Name	SE S and R P and B
Address	Transport Bhawan

中国国际贸易促进委员会

China Council for the Promotion of International Trade
China Chamber of International Commerce

证 明 书

CERTIFICATE

号码 No. 181100B0/020775

兹证明：在所附文件上的柳州欧维姆机械股份有限公司的印章属实。

THIS IS TO CERTIFY THAT: the seal of LIUZHOU OVM MACHINERY CO., LTD. on the annexed DOCUMENT is genuine.

China Council for the Promotion of International Trade

授权签字：

Authorized Signature: Sun Jia

日期：2018年04月18日

(Date: Apr. 18, 2018)

Agency Status Proclamation

OVM Ref. No.: OVMINDSC1701

Date: Dec. 16, 2017

To whom it may concern,

This is to furnish proclamation to notice that:

M/S. SCON INFRASTRUCTURE (SCON)

OFFICE 17,GORAI MATRUASHISH CHSL, RSC-52, GORAI-2, BORIVALI(WEST),

MUMBAI-400092, INDIA

Being authorized as our sales agent in India to execute promotion, sales and service of OVM products, based on a Sales Agency Agreement concluded between OVM & SCON in Year 2017.

Scope Definition	***Exclusiveness***
OVM Expansion Joints	***Non-exclusive***

Validity: *from Dec. 16, 2017- Jun. 30, 2022*

Wen Shu (GM of International Dept)

For and behalf of

Liuzhou OVM Machinery Co., Ltd.

LIUZHOU OVM MACHINERY CO., LTD.
Add: No.1, Yanghui Road, Liuzhou, Guangxi, 545006, P.R.China
Email: sales@ovm.cn Website: http://www.ovm.cn
Tel: +86 772 3116402 Fax: +86 772 3118665

认字第180125316-001号

兹证明前面文书上中国国际贸易促进委员会商事证明专用章和授权签字人（**孙嘉**）的签字属实。

中华人民共和国外交部
领事司一等秘书
二〇一八年四月二十日

8185191

No. T-1076 dated 8.5.18

Seen in the Embassy of India, Beijing.

The Embassy of India, Beijing accepts no responsibility for the contents of the document(s).

Prakash Swaroop
Asstt. Consular Officer
Embassy Of India
Beijing

Company Profile of

SCON Infra Prestress Llp

(SCON)

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52,
Borivali (W) – 400092

INFRA PRESTRESS LLP

Description of Our Bridge Bearings

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092

www.sconinfra.com info@sconinfra.com

STRUCTURAL BEARINGS

Definition :-

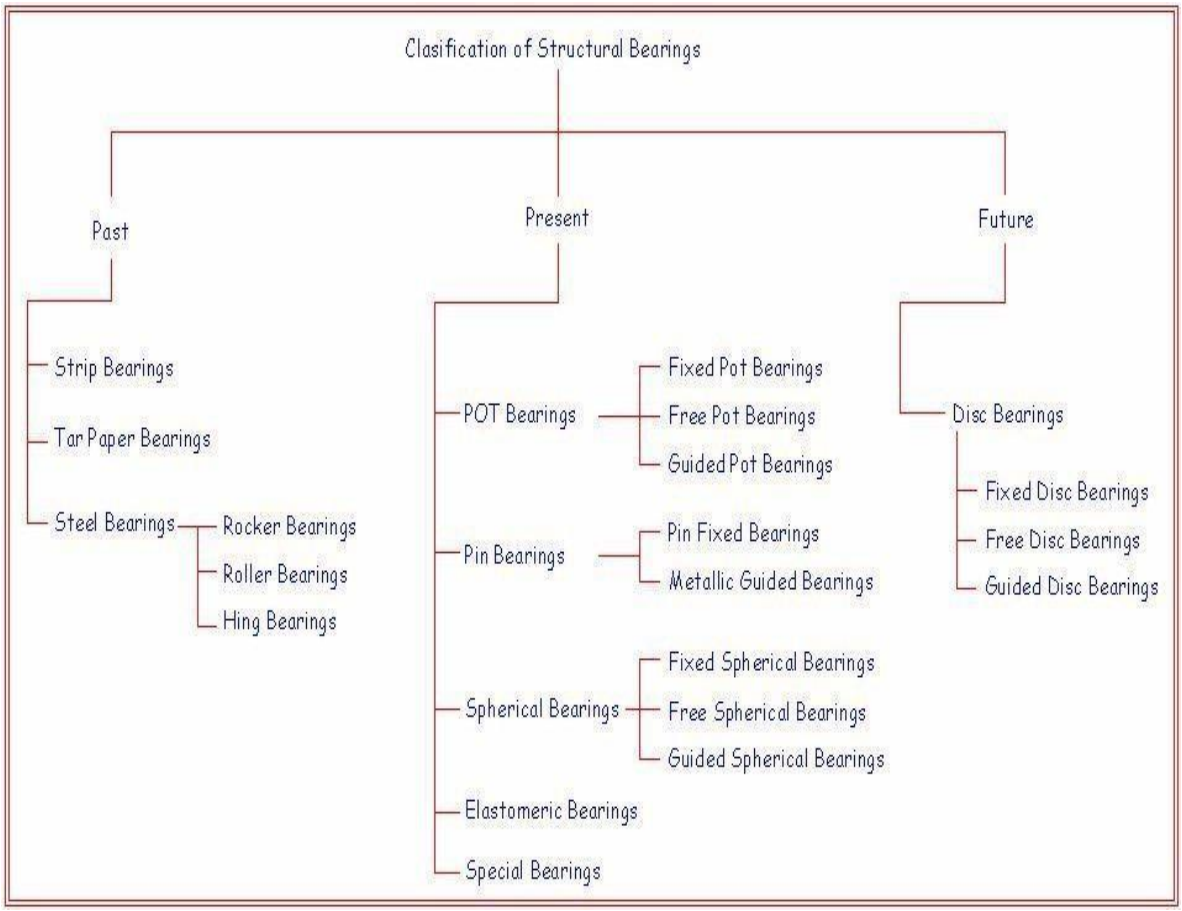
A Device provided in between the Substructure and the Superstructure to control the interaction of these two is called Bearing.

The function of a Bearing is to safely transmit the Loads and Forces acting on to or from the Superstructure to the Substructure underneath while providing for free translation and rotation of the Structure supported by the Bearing.

Concept :-

A shallow steel cylinder is inserted with a thinner, neat fitting, disc of Elastomer which has a recess for Brass Sealing Rings. A steel Piston is then inserted into the steel cylinder and bears against the Elastomeric disc. The resulting assembly is frequently perceived as being similar to that of an hydraulic fluid sealed within the cylinder and the Piston arrangement but is free to rotate about any horizontal axis with minimum resistance which is a highly desirable feature of bridge bearing. By keeping rotational resistance to a minimum, a uniform distribution of load into the structure is ensured.

Classification of Structural Bearings :-



SCON's Team's Design Capabilities :-

SCON's team for designing and manufacturing of Structural Bearings are capable to design & manufacture the structural bearings to comply with the globally accepted codes and standards like –

I) European Code Specification.

II) IRC Specification.

III) MORTH Specification.

IV) RDSO - Research and Design Standard Organization Specification.

V) BRO - Border Road Organization Specification.

SCON's Range of Structural Bearings :-

A) Steel Bearings incl. Rocker, Roller, Hinge and Plate Bearings etc.
B) Pot / Pot – cum – PTFE Bearings.
C) Pin Fixed and Metallic Guide Bearings.
D) Spherical Bearings.
E) Mono-Guide Bearings (Pot PTFE/Spherical Bearings).

General Features of SCON POT / POT – cum – PTFE BEARINGS :-

Multi Directional Rotation.

Unlimited Translation / movement Capacity.

Complex Load & Movement Combination.

No Elastic Counterstroke.

Basic Type of SCON's POT / POT – cum – PTFE BEARINGS :-

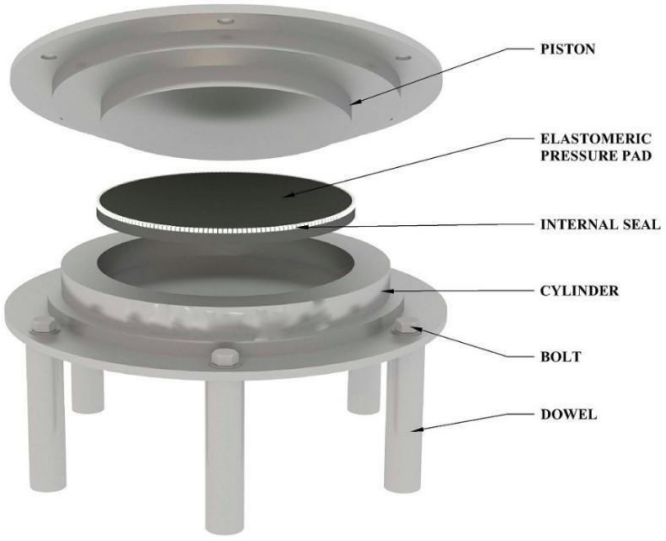
FIXED TYPE	-	Designated by Code " SFX "
FREE FLOAT TYPE	-	Designated by Code " SFF "
SLIDE GUIDE TYPE	-	Designated by Code " SSG "

FIXED POT BEARING (SFX)

A type of structural bearing which along with vertical load, bears and transmits horizontal forces in any direction and allows rotation about any axis in horizontal plane without permitting any movement, is called as Fixed Pot Bearing.

Characteristics of SCON Fixed Bearings :-

Bears Vertical Loads.
Provide Lateral restraint in any Horizontal axis.
Equal rotation about any axis in Horizontal Plane.
Must be locked into the structure.



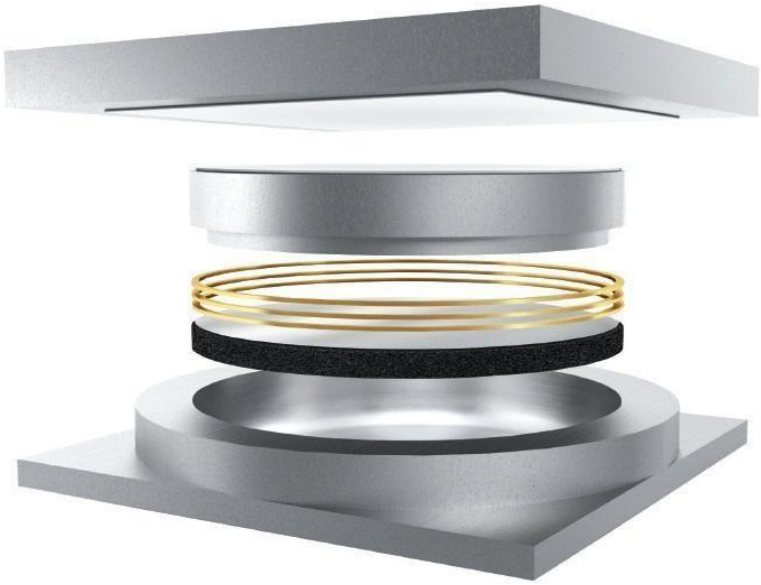
FIXED TYPE POT BEARING

FREE FLOAT POT BEARING

A type of POT PTFE Bearing which bears & transmits vertical load & allows movement in any direction in the horizontal plane and accommodates rotation about any axis in horizontal plane.

Characteristics of SCON Free Float Bearing :-

Bears Vertical Loads.
Equal rotation about any horizontal axis.
Free sliding translation both in Longitudinal & transverse directions.
Friction alone can be used to locate this type of bearing in the structure.

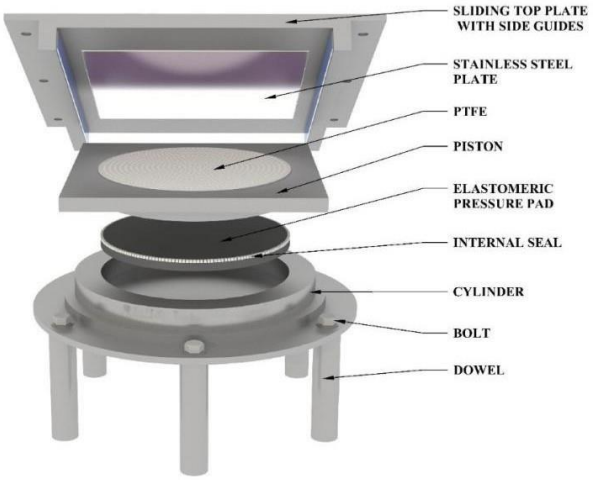


SLIDE GUIDE POT BEARING

A type of POT PTFE Bearing which along with vertical loads bears & transmits horizontal force in one direction only & allows movement perpendicular to that direction and allows rotation about any axis in horizontal plane.

Characteristics of SCON Slide Guide Bearing :-

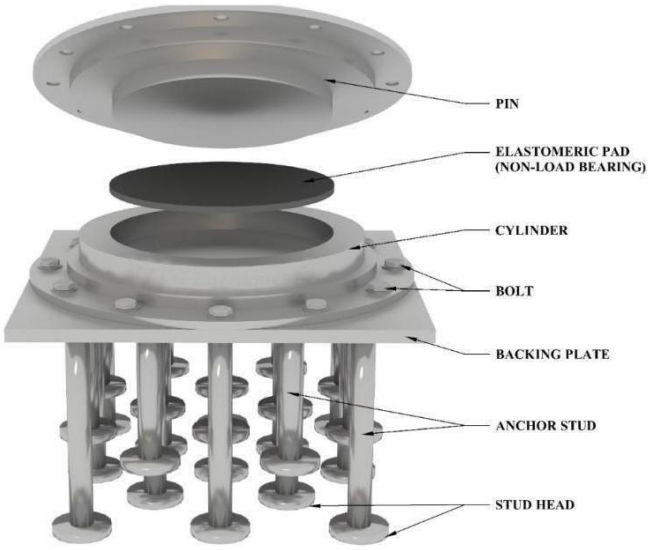
Bears Vertical Loads.
Restrained in one direction free to slide normal to that direction.
Equal rotation about any horizontal axis.
Must be restrained in the structure.



GUIDED SLIDING TYPE POT-CUM-PTFE BEARING

PIN BEARING

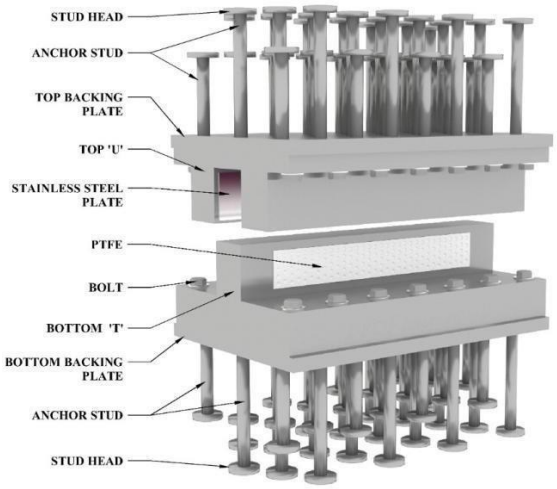
A bearing consisting of a metal pin provided within a metal cylinder to bear & transmit horizontal force along any direction in the horizontal plane and accommodating the rotation about any axis in Horizontal Plane. Pin bearings cannot bear or transmit any vertical load.



PIN BEARING

METALLIC GUIDED BEARING

A bearing consisting of a sliding assembly with restraint along a desired direction to bear and transmit horizontal force and capable of allowing movement in a direction perpendicular to the direction of horizontal force is called as Metallic Guided Bearing. Metallic Guided Bearing are capable of allowing rotation only about an axis perpendicular to the plane of sliding. Guided Bearing cannot bears or transmit any Vertical Load.



METALLIC GUIDE BEARING

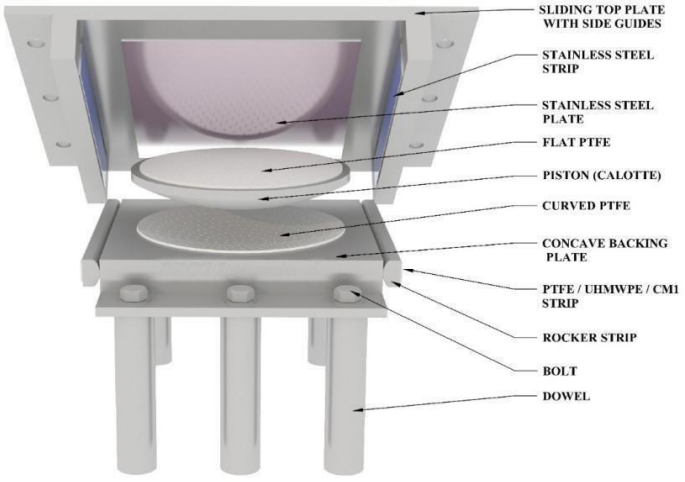
SPHERICAL BEARINGS.

Bearings with curved sliding surfaces include spherical and cylindrical bearings, and they are special cases of lubricated bronze or PTFE sliding surfaces. They are used primarily for sustaining large rotations about one or more axes.

They are able to support loads up to several thousand tons and may accommodate rotations of more than 5 degrees. They are likely to be more expensive than a pot bearing, but they can be designed to tolerate larger rotations than pot bearings. As like Pot Bearings these bearings are also of three basic types.

Basic Type of SCON's Spherical BEARINGS :-

SPHERICAL FIXED TYPE	-	Designated by Code " SSFX "
SPHERICAL FREE FLOAT TYPE	-	Designated by Code " SSFF "
SPHERICAL SLIDE GUIDE TYPE	-	Designated by Code " SSSG "



GUIDED SLIDING TYPE SPHERICAL BEARING

SCON's Quality Team is Backed By :-

Machinery for bearing manufacturing as per MORTH & IRC guidelines.

SCON is equipped with the testing facilities as per MORTH & IRC guidelines.

SCON is having Test Press of 1000 MT Vertical Load & 350 MT Horz. Load.

SCON have our its own design, production, quality & installation teams

Hardness Tester.

Pre calibrated Scales, Vernier Calipers, Dial Gauges etc.

Ultrasonic Testing Machine Mod sonic Galileo make.

Surface Roughness Testing equipment Mitutoyo make.

Poldy Hardness Testing apparatus for testing Surface Hardness of steel material.

Alcometer Pulscheco make for testing dry film thickness of Epoxy Paint System.

Dye penetration testing set-up (Flaw Check) make for testing quality of weld and Castings

Pull out testing set-up for testing Anchorage strength, capacity 50 MT.

Water Tightness Testing set-up the Expansion Joint System.

Debris Expelling Test set-up for Expansion Joint System.

Seal Stretch and Racking movement testing set-up for Expansion Joint System.

ASPECTS RELATED TO BEARING PERFORMANCE & INSTALLATION :-

Bearings are to be installed with due care to ensure their correct functioning in accordance with the design of the Structure. The factors to be considered during the Installation of the Bearings are :-

DESIGN ASPECT :-

Bearings shall be so located as to avoid accumulation of dirt & debris and also from rainwater seepage that may affect their performance.

Provision of Jacking Points shall be made during the design / construction of the Structureto facilitate the Lifting of the Superstructure in future for the Maintenance or removal of the Bearings.

The Bearing manufacture shall be consulted at an early stage of the structure design for tentative Bolt Locations so that the hassles of Tendons / Prestressing Strands fouling with the Bearing Dowels shall be avoided.

SUPPLY ASPECT :-

Bearings are to be supplied with suitable Identification Plates & proper marking on top ofthe Bearing showing Type, Capacity and Direction of the Bearing.

Bearings shall be Provided with Transport Brackets firm in position, painted with redColor for distinguished appearance.

Bearings shall be Packed in Heavy Duty Polythene Sheets and firmly clamped on theWooden crates for safe Transportation.

SITE HANDLING ASPECT :-

Transport Brackets are not to be relied for the Lifting of the Bearings.

Upon receipt of the Bearings at Site, the contractor shall have a visual Examination of the bearings to ensure that no damage of Displacement of the bearings is taken place during the Transportation. Any rectification if required shall be done strictly in the presence of the Manufacturers Representative.

INSTALLATION ASPECT :-

Bearings shall be installed truly horizontal with Top & Bottom Components of theBearings perfectly parallel to each other.

The positioning of the Bolts & Bowels for Both the Substructure as well as theSuperstructure shall be made as per the Shop Drawings.

The Dowels / Distribution Plates shall be Properly grouted with suitable grout material.

In case of Moving Bearings, particular care shall be taken to ensure the correctOrientation of the Bearings.

In In-situ type of Construction the Bearings shall be covered from all sides to avoid theingress of cement slurry etc. inside the bearing Components.

In case of Pre-cast Construction, due care is to be taken while launching the Girders on tothe Bearings. Girders shall not be rested freely over the Bearings without any Support.

Transport Brackets shall be removed at an appropriate time after the setting of theSuperstructure Concrete.

Bearings and its components shall be checked for any dust, dirt or Cement Slurry Deposit etc. and the surrounding area shall be cleaned thoroughly once the Process of bearing Installation is Over.

ASPECTS RELATED TO SERVICE LIFE AND MAINTAINANCE OF THE STRUCTURAL BEARING :-

Pot / Pot – cum – PTFE Bearings because of their proven Experience in the past are regarded as virtually maintenance free Bearings and performs satisfactorily throughout the service life of the Bridge Structure.

However, further to ensure safe and sound performance of the Bearings during the Service life routine maintenance schedule shall be planned and implemented an appropriate interval of 2 to 3 Years. The factors to be given Importance during the Inspection are :-

Measurement of Movement
Measurement of Dimensions
Evidence of locked in Condition
Evidence of Corrosion
Condition of the adjacent Bridge Structure

Necessary Repair and / or Replacement of the Damaged Components shall be taken on Priority in consultation with the Bearing manufacturer.

In case of defects where the cause cannot be determined by the inspecting person or the responsible Bridge Engineer, the bearing manufacturer shall be consulted.

Approval Letter/Approved

Sample Drawings for Our Ongoing Projects of StructuralBearings

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092

www.sconinfra.com info@sconinfra.com

PADECO
Asia | Europe | Africa

PADECO India Pvt. Ltd.
Sunteck Center, 37-40, 4th Floor, Subhash Road
Navpada, Netaji Subhah Nagar, Vile Parle
Mumbai 400057, India
CIN: U74900MH2016FTC272623

Tel: +91-22-4543-5400
Mail: pipl@padeco.co.in
Web: www.padeco.co.in

Ref: PADECO/SCLR-II/SCON/CERT/2022/01

Date: 08/01/2022

TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s SCON INFRASTRUCTURE has successfully supplied Pot PTFE Bearings for our SCLR Phase-2 (Design and Construction of Elevated Corridor from Bharat Diamond Bourse Company BKC to Vakola Junction -Besides Vakola Nallah)

This material has been supplied as per IRC-83 Part-3 2002 applicable specification designs, manufacturing, testing of Pot-PTFE Bearings in Presence of MMRDA and PADECO Consultant.

Thanking you,

For M/s Padeco Consultatnt.

PADECO Co., Ltd.
Shin-Onarimon Bldg., 6-17-19 Shinbashi, Minato-ku, Tokyo 105-0004, Japan
Tel +81-3-5733-0855 | Fax +81-3-5733-0855 | Web www.padeco.co.jp

株式会社パデコ
Japan

SHRIKHANDE
CONSULTANTS PVT. LTD.
TRUST • EXPERIENCE • QUALITY

Letter No.: SCPL/A 3408-P/RTC X /2022/085 Date: 21.10.2022

To,

The Vice President,
M/s. MVR Infra Projects Pvt. Ltd.,
No. 8-2-293/82/J-III/436, Near Apollo Pharmacy,
Road No. 80, 3rd Phase, Jubilee Hills,
Hyderabad.

Sub: "Construction of 4 lane bidirectional elevated corridor from Indira Park to VST main road crossing NTR stadium junction, Ashoknagar crossroad junction and Baghlingampally junction" and "Construction of 3 lane bidirectional Grade Separator from Ram Nagar to Baghlingampally crossing VST main road junction at 2nd level and passing through the Indian Hume pipe Co., Ltd and Vazir Sultan Tobacco Land" – **Source Approval For M/s. SCON INFRASTRUCTURE– Bearings Source Approvals-Reg.**

Ref: MVRIPPL/HYD/SCPL/RTC X ROADS/2020-21/108 Dt: 03-10-2021

Dear Sir,

In reference to your above letter for source approvals, the credentials are reviewed the submittals and on the basis of evaluation of technical documents submitted by EPC agency for the **POT/PTFE Bearings**, the PMC team(HO) from visited the factory of M/s.**SCON** in Thane, MUMBAI and conducted tests and verified the measurements and found within tolerable.

Hence, the above source for bearings are provisionally approved. During the project course time if found any errors, discrepancies in designs, productions shall be notified in prior notice and subsequently modified by EPC agency.

Thanking you Sir,

Yours Faithfully,

(For SHRIKHANDE CONSULTANTS PVT. LTD.)

SHRIKHANDE CONSULTANTS HYD.

(H.M.Radha krishna)
Project Manager

C.C: The Executive Engineer (Projects) – GHMC

Encl: Credential Report of M/s. SCON INFRASTRUCTURE.

CIN: U74210MH1978PTC020860
33-35, Shanti Centre, 3rd Floor, Plot No. 8, Sector No. 17, Vashi, Navi Mumbai - 400 705.
T. 91.22.2789 1444/ 2763/3993 | F. 91.22.2789 1249 | E. scplvashi@gmail.com | W. www.scplasia.com

PROJECT COVER SHEET

PROJECT : CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION

CLIENT : MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY

CONTRACTOR : M/s NIRAJ CEMENT STRUCTURALS LTD.

CONSULTANTS : SPECTRUM TECHNO CONSULTANTS PVT. LTD.

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20 /07 /13 Date: 5/09/18 info@construma.in | 022-28487415 KHAR (W), MUMBAI - 400052

Drawing Number Allocation :-

S. No.	V - Load	Type	Drg. No.	Qty.
01	2189 KN	Fixed Bearing	SI/NCSL/NG/18/09 - 1005 , R0	(8+4)+(4+2) = 18 NOS.
02	1874 KN	Free Float Bearing	SI/NCSL/NG/18/09 - 1006 , R0	8 + 8+ 4+ 4 = 24 NOS.
03	3161 KN	Free Float Bearing	SI/NCSL/NG/18/09 - 1007 , R0	8 + 4 = 12 NOS.
04	1244 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1008 , R0	4 + 4 + 2 + 2 = 12 NOS.
05	1412 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1009 , R0	8 + 8 + 4 + 4 = 24 NOS.
06	2084 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1010 , R0	8 + 4 = 12 NOS.
07	2189 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1011 , R0	4 + 2 = 06 NOS.
08	3161 KN	Slide Guide (T) Bearing	SI/NCSL/NG/18/09 - 1012 , R0	8 + 4 = 12 NOS.

NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI

Total = 120 NOS.

S. No.	DATE	Rev No.	DESCRIPTION	CKD. BY.
01	21/09/2018	00	INITIAL SUBMISSION	NG

TITLE : PROJECT COVER SHEET			
DRG. NO. : SI/NCSL/NG/18/09 - 1005 ,Sheet 1 OF 2.			DRG. DT. : 21/09/2018
SCALE N.T.S.	REV 00	DRAWN BY R.S	CHECKED BY N.G

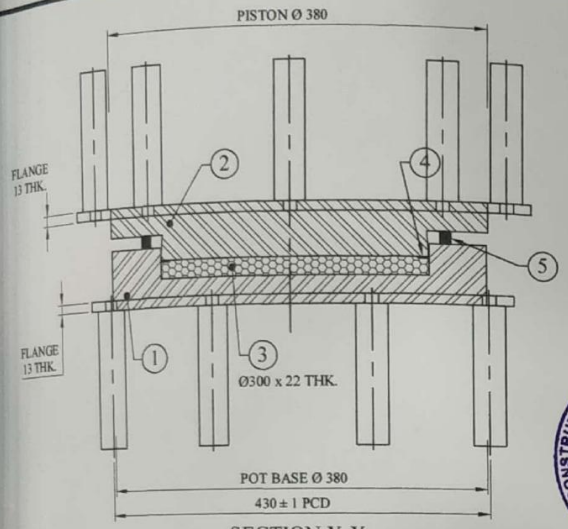
PROJECT : CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION

CLIENT : MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY

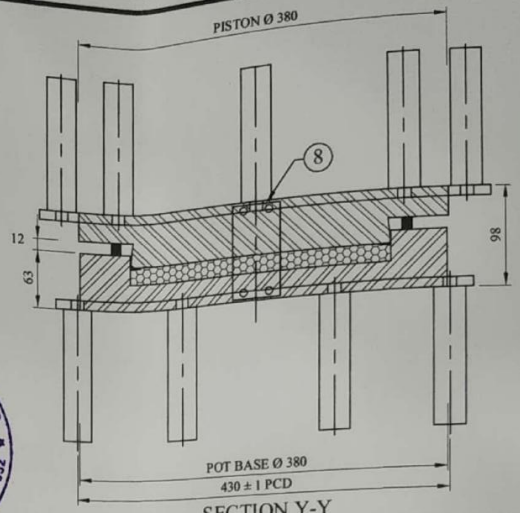
CONTRACTOR : M/s NIRAJ CEMENT STRUCTURALS LTD.

CONSULTANTS : SPECTRUM TECHNO CONSULTANTS PVT. LTD.

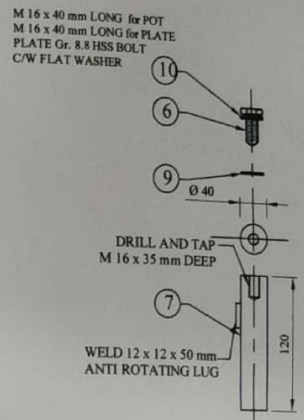
MANUFACTURER / DESIGNER : SCON INFRASTRUCTURE



SECTION X-X



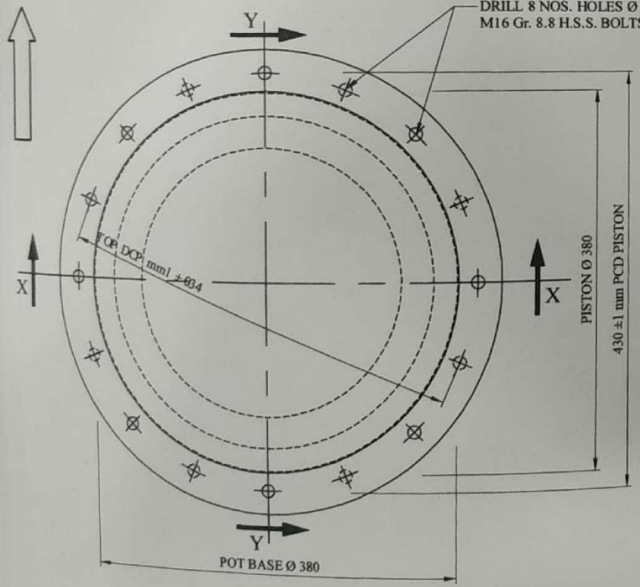
SECTION Y-Y



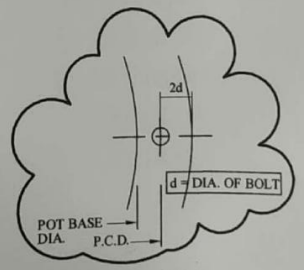
DOWEL

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20/11/13 Date: 21/11/13 info@construma.in | 022-28487415 KHAR (W), MUMBAI - 400052

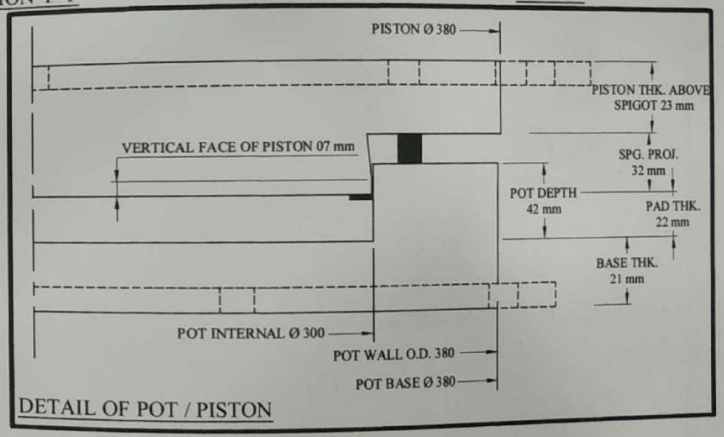
TRANSVERSE DIRECTION OF BRIDGE



PLAN



LUG DETAIL



DETAIL OF POT / PISTON

TRAFFIC DIRECTION OF BRIDGE

(LONGITUDINAL DIRECTION)

NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI TEL 41115900

NOTES:-

01. ALL DIMENSION ARE IN MM, UNLESS OTHERWISE STATED.
02. P.C.D. = PITCH CIRCULAR DIAMETER.
03. MARK TOP OF BEARING WITH
    - SYMBOL REPRESENTING TYPE OF BEARING.
    - TYPE PER CUSTOMER DRAWING.

REV.	DESCRIPTION	DATE
	SCI INFRASTRUCTURE	
PROJECT	: CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION (BESIDES VAKOLA NALLAH)	
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY	
CONSULTANT	SPECTRUM TECHNO CONSULTANTS PVT. LTD.	
CONTRACTOR	:NIRAJ CEMENT STRUCTURALS LTD	
TITLE	: TECHNICAL NOTES & DETAILS OF DRAWING OF FIXED BEARING SPFX - 2189 KN	DATE : 21/08/2018
DRG. NO.	: SI / NCSL / NG / 18 / 09 - 1005	CHECKED BY. N.G.
SCALE N.T.S.	REV. 00 / SHEET 2 OF 2 / DRAWN BY. R.S	

DRAWING TABULATION / LISTING OF SI / CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANYBKC TO VAKOLA JUNCTION (BESIDE VAKOLA NALLAH /2189 KN FIXED BEARING

DRG. NO	REV No.	DATE	DETAILS
SI/NCSL/NG/18/09 - 1005 //SHEET 1 OF 2	00	21/09/2018	SCHEDULE OF DRAWINGS & TECHNICAL NOTES ID & TYPE DESIGNATION
SI/NCSL/NG/18/09 - 1005 //SHEET 2 OF 2	00	21092018	GENERAL ASSEMBLY

NOTE :- COMPONENT SERIAL NOS. MENTIONED BELOW ARE SHOWN IN SHEET 2 OF 2

S. No.	DESCRIPTION	MATERIAL	QTY.	SPECIFICATION
10	FLAT WASHER	STEEL	16	STD.
9	NEOPRENE WASHER		16	ELASTOMER
8	TRANSPORT BRACKET	MILD STEEL	02	IS: 2062
7	DOWEL	MILD STEEL	16	IS: 2062
6	ATT. BOLT M 16	Gr. 8.8 H.S.S.	16	IS: 1367
5	DUST SEAL	FLEXIBLE FOAM	01	BITUMEN IMPREGNATED
4	BRASS RING	BRASS	02	HALF HARD BRASS
3	NEOPRENE PAD	NEOPRENE	01	MOST CLAUSE 2006.3
2	PISTON	CAST STEEL	01	IS: 1030 Gr. 340-570 W
1	POT	CAST STEEL	01	IS: 1030 Gr. 340 - 570 W

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20(E)/113 Date: 8/10/18 info@construma.in / 022-26487415 KHAR (W), MUMBAI - 400052

CALCULATIONS BASED ON 2189 KN FIXED BEARING

QUANTITY	-	(8+4)+(4+2) =18 Nos.
NEOPRENE PAD	-	300 mm DIA. x 22 mm THICK Stress 30.96 MPa ≤ 35 MPa Rotation 0.018 Rad. ≥ 0.013
BRASS SEALING RINGS	-	2 Nos. (20.0 mm WIDE x 2 mm THK.)
CONCRETE STRESSES	-	UPPER 21.63 MPa ≤ 30 MPa LOWER 21.63 MPa ≤ 30 MPa
ATTACHMENT BOLTS	-	M 16 x 40 Gr. 8.8 BOLTS FOR POT M 16 x 40 Gr. 8.8 BOLTS FOR PISTON
DOWELS	-	40 mm Dia x120 mm LONG Drill and Tap M 16 x 35 mm
CONCRETE STRESS TO FERRULES	-	18.63 Mpa - NS, 18.63 Mpa - S

Bearing Type	Case	Vertical Load (KN) Max.	Min.	Hor. Load (KN) Long.	Trans.	Movement (mm)
Fixed Bearing	Non Seismic	2189	919	217.71	22	0.00
	Seismic	1895	881	401	00.00	0.00

NOTES:-

BEARING TYPE :- TYPE 8 & 9 (P44 ,P47,P50 ,P59) Straight Span Module & Type - 8 & 9 (P53 & P56) Curvature Module .

MATERIALS :

1. CONFINED ELASTOMER INSIDE POT WILL HAVE FOLLOWING PROPERTIES
   a) HARDNESS IRHD IS:3400 (PART II) 50±5
   b) MIN. TENSILE STRENGTH MPa IS:3400 (PART I) 15.5
   c) MIN ELONGATION AT BREAK , MAX COMPRESSION SET & ACCELERATED AGING WILLBE AS PER TABLE -1 - PROPERTIES OF ELASTOMER IN IRC:83(PART II)
2. ANCHORES: HSS BOLTS OF Gr. 8.8 & SLEEVE MATERIAL AS PER IS 2062.
3. ACESSORIES TO IS 226 / 2062.

WELDING :

ALLWELDING WILL BE MANUAL METAL ARC PROCESS CONFORMING TO IS: 814,PRE HEATING & POST WELD STRESS RELIEVING TO BE DONE IF REQUIRED.

FINISHING :

a) ALL NONWORKING SURFACES WILL BE COATED WITH 2 COATS OF EPOXY PRIMER & ONE OR MORE COATS EACH OF EPOXY INTERMEDIATE AND FINISH PAINT. TOTAL DRY FILM THICKNESS ≥ 160 MICRONS.

b) ANCHORE SLEEVES WILL BE CEMENT COATED AT SITE.

TESTS :

a) TESTS ON CASTING: TESTS SPECIFIED IN IS : 1030 WILL BE PERFORMED. CASTINGS SHALL BE ULTRASONICALLY TESTED & CERTIFICATES SUBMITTED. QUALITY LEVEL 3 AS PER IS : 9565.

b) ACCPETANCE TEST ON BEARINGS.

c) ALL TESTS ON BEARINGS WILL BE CARRIED OUT IN PRESENCE OF REPRESENTATIVE OF DPT./ P.M.C. NECESSARY TEST CERTIFICATES FOR RAW MATERIALS SHALL BE FURNISHED AT THE TIME OF SUPPLY.

d) TEST ON WELDING: WELDING WILL BE TESTED BY DYE PENETRATION METHOD. BUTT WELDING WILL BE TESTED BY ULTRASONIC METHOD SOUNDNESS OF WELDING SHALL BE CERTIFIED BY THE MANUFACTURER

TOLERANCES

a) PLAN DIMENSIONS : - 0 TO + 5mm
b) OVERALL HEIGHT : - 0 TO + 3mm
c) HEIGHT OF ELASTOMER : - 0 / + 5%
d) HEIGHT OF ANY STEEL COMPONENT
   1) MACHINED : - 0 TO + 1mm
   2) UNMACHINED : CLASS 2 OF IS :4897

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI

NIRAJ CEMENT STRUCTURALS LTD MUMBAI

REV.	DESCRIPTION	DATE

PROJECT	: CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION (BESIDES VAKOLA NALLAH)
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY
CONSULTANT	SPECTRUM TECHNO CONSULTANTS PVT. LTD.
CONTRACTOR	:NIRAJ CEMENT STRUCTURALS LTD
TITLE	: TECHNICAL NOTES & DETAILS OF DRAWING OF FIXED BEARING SPFX - 2189 KN
DRG. NO.	: SI / NCSL / NG / 18 / 09 - 1005

SCALE	REV.	SHEET	DRAWN BY.	CHECKED BY.	DATE
N.T.S.	00	1 OF 2	R.S	N.G.	21/09/2018

PROJECT COVER SHEET

PROJECT : CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION

CLIENT : MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY

CONTRACTOR : M/s NIRAJ CEMENT STRUCTURALS LTD.

CONSULTANTS : SPECTRUM TECHNO CONSULTANTS PVT. LTD.

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20 KI/13 Date: 5/11/18 info@construma.in | 022-28487415 KHAR (W), MUMBAI - 400052

Drawing Number Allocation :-

S. No.	V - Load	Type	Drg. No.	Bearing Location
01	2189 KN	Fixed Bearing	SI/NCSL/NG/18/09 - 1005 , R0	BEARING TYPE :- TYPE 8 & 9 (P44 ,P47,P50 ,P59) Straight Span Module & Type - 8 & 9 (P53 & P56) Curvature Module .
02	1874 KN	Free Float Bearing	SI/NCSL/NG/18/09 - 1006 , R0	BEARING TYPE :- TYPE 1 & 4 (P43 ,P46,P49 ,P58) (P46 , P49 ,P52,P61) Straight Span Module & Type - 1& 4 (P52 & P55)(P55& P58) Curvature Module .
03	3161 KN	Free Float Bearing	SI/NCSL/NG/18/09 - 1007 , R0	BEARING TYPE :- TYPE 10 (P45 ,P48,P51 ,P60) Straight Span Module & Type - 10 (P54 & P57) Curvature Module .
04	1244 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1008 , R0	BEARING TYPE :- TYPE 3 & 6 (P43 ,P46,P49 ,P58) (P46,P49,P52,P61) Straight Span Module & Type - 3 & 6 (P52 & P55) (P55 , P58) Curvature Module .
05	1412 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1009 , R0	BEARING TYPE :- TYPE 2 & 5 (P43 ,P46,P49 ,P58) (P46,P49,P52,P61) Straight Span Module & Type - 2 & 5 (P52 & P55) (P55 , P58) Curvature Module .
06	2084 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1010 , R0	BEARING TYPE :- TYPE 11 (P45 ,P48,P51 ,P60) Straight Span Module & Type - 11 (P54 & P57) Curvature Module .
07	2189 KN	Slide Guide (L) Bearing	SI/NCSL/NG/18/09 - 1011 , R0	BEARING TYPE :- TYPE 12 (P45 ,P48,P51 ,P60) Straight Span Module & Type - 12 (P54 & P57) Curvature Module .
08	3161 KN	Slide Guide (T) Bearing	SI/NCSL/NG/18/09 - 1012 , R0	BEARING TYPE :- TYPE 7 (P44 ,P47,P50 ,P59) Straight Span Module & Type - 12 (P53 & P56) Curvature Module .

NIRAJ CEMENT STRUCTURALS MUMBAI

SPECTRUM TECHNO CONSULTANTS PVT. LTD. VASHI MUMBAI TEL 41415100

S. No.	DATE	Rev No.	DESCRIPTION	CKD. BY.
01	21/09/2018	00	INITIAL SUBMISSION	NG

TITLE	: PROJECT COVER SHEET		
DRG. NO.	: SI/NCSL/NG/18/09 - 1005 , Sheet 2 OF2.		DRG. DT. : 21/09/2018
SCALE N.T.S.	REV 00	DRAWN BY R.S	CHECKED BY N.G

PROJECT : CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION

CLIENT : MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY

CONTRACTOR : M/s NIRAJ CEMENT STRUCTURALS LTD.

CONSULTANTS : SPECTRUM TECHNO CONSULTANTS PVT. LTD.

MANUFACTURER / DESIGNER : SCON INFRASTRUCTURE

DRAWING TABULATION / LISTING OF SI /CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION / 1874 kN FREE FLOATBEARING

DRG. NO	REV No.	DATE	DETAILS
SI/NCSL/NG/18/09 - 1006 //SHEET 1 OF 2	00	21/09/2018	SCHEDULE OF DRAWINGS & TECHNICAL NOTES ID & TYPE DESIGNATION
SI/NCSL/NG/18/09 - 1006 //SHEET 2 OF 2	00	21/09/2018	GENERAL ASSEMBLY

NOTE :- COMPONENT SERIAL NOS. MENTIONED BELOW ARE SHOWN IN SHEET 2 OF 2

S. No.	DESCRIPTION	MATERIAL	QTY *	SPECIFICATION
14	FLAT WASHER	STEEL	08	STD
13	NEOPRENE WASHER		08	ELASTOMER
12	WIPER SEAL	NEOPRENE	1	ELASTOMER
11	TRANS. BRACKET	MILD STEEL	2	IS : 2062
10	DOWELS	MILD STEEL	08	IS : 2062 / IS : 226
9	ATT. BOLT M 16	Gr. 8.8 HSS.	08	IS : 1367
8	DUST SEAL	FLEXIBLE FOAM	1	BITUMEN IMPRIGNATED
7	BRASS RINGS	BRASS	2	HALF HARD BRASS
6	NEOPRENE PAD	NEOPRENE	1	MOST CLAUSE 2006.3
5	STAINLESS STEEL PLATE x 3 mm		1	AISI : 304
4	DIMPLED PTFE	PTFE BS 5400	1	Gr. A of BS : 3784
3	SLIDE PLATE	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W
2	PISTON	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W
1	POT	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W

* FOR ONE BEARING

BEARING TYPE :- TYPE 1 & 4 (P43 ,P46,P49 ,P58) (P46 , P49 ,P52,P61) Straight Span Module & Type - 1& 4 (P52 & P55)(P55& P58) Curvature Module .

CALCULATIONS BASED ON 1874 kN FREE FLOAT BEARING

QUANTITY	-	(8+8)+(4+4)= 24 NoS.
NEOPRENE PAD	-	280 mm DIA. x 20 mm THICK Stress 30.43 MPa ≤ 35 MPa Rotation 0.0171 Rad > 0.0130
BRASS SEALING RINGS	-	2 Nos. (20 mm WIDE x 2 mm THK.)
TEFLON	-	280 mm Dia x 4.5 mm Thick (to BS : 5400 , Dimpled).
CONCRETE STRESSES	-	UPPER 23.36 MPa ≤ 30 MPa LOWER 23.36 MPa ≤ 30 MPa
ATTACHMENT BOLTS	-	M 16 x 40 Gr. 8.8 BOLTS For POT M 16 x 40 Gr. 8.8 BOLTS For PLATE
DOWELS	-	40 mm Dia x 120 mm LONG Drill and Tap M 16 x 35 mm
		Concrete Stress to Ferrules 18.63 Mpa - NS, 18.63 Mpa - S

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20 [illegible] Date: 5/10/18 info@construma.in / 022-26467415 KHAR (W), MUMBAI - 400052

Bearing Type	Case	Vertical Load (kN) Max.	Vertical Load (kN) Min.	Hor. Load (kN) Long.	Hor. Load (kN) Trans.	Movement L : T (mm)
Free float Bearing	Non Seismic	1874.00	929.00	187.40	000.00	+75/-24 ; ±4
	Seismic	1418.00	867.00	141.80	000.00	

NOTES

MATERIALS :

1. CONFINED ELASTOMER INSIDE POT WILL HAVE FOLLOWING PROPERTIES
   a) HARDNESS IRHD IS:3400 (PART II) 50 ± 5
   b) MIN. TENSILE STRENGTH MPa IS:3400 (PART I) 15.5
   c) MIN ELONGATION AT BREAK , MAX COMPRESSION SET & ACCELERATED AGING WILLBE AS PER TABLE-1 - PROPERTIES OF ELASTOMER IN IRC:83(PART III)
2. ANCHORES: HSS. BOLTS OF Gr. 8.8 & SLEEVE MATERIAL AS PER IS 2062.
3. ACESSORIES TO IS 226 / 2062.
4. CONFINED PTFE WILL BE OF UNFILLED QUALITY AND WILL HAVE REQUIRED PROPERTIES REGARDING TENSILE STRENGTH ETC. AS PER BS:5400 SEC 9.2 , BS 3784 & BS 6564. THE THICKNESS SHALL BE > OR = 4.5 MM.
5. THE STAINLESS STEEL STEEL SHALL BE STICH WELDED / SCREWED ON THE BACKING PLATE.

WELDING :

ALL WELDING WILL BE MANUAL METAL ARC PROCESS CONFORMING TO IS: 814,PRE HEATING & POST WELD STRESS RELIEVING TO BE DONE IF REQUIRED.

FINISHING :

a) ALL NONWORKING SURFACES WILL BE COATED WITH 2 COATS OF EPOXY PRIMER & ONE OR MORE COATS EACH OF EPOXY INTERMEDIATE AND FINISH PAINT. TOTAL DRY FILM THICKNESS > 160 MICRONS.
b) ANCHORE SLEEVES WILL BE CEMENT COATED AT SITE.

GREASING :

SILICON GREASE WILL BE APPLIED AT PTFE STAINLESS STEEL INTER FACE.

TESTS :

a) TESTS ON CASTING: TESTS SPECIFIED IN IS : 1030 WILL BE PERFORMED. CASTINGS SHALL BE ULTRASONICALLY TESTED & CERTIFICATES SUBMITTED. QUALITY LEVEL 3 AS PER IS : 9565.
b) ACCEPTENCE TESTS ON BEARINGS.
c) ALL TESTS ON BEARINGS WILL BE CARRIED OUT IN PRESENCE OF REPRESENTATIVE OF DPT./ P.M.C. NECESSARY TEST CERTIFICATES FOR RAW MATERIALS SHALL BE FURNISHED AT THE TIME OF SUPPLY.
d) TEST ON WELDING: WELDING WILL BE TESTED BY DYE PENETRATION METHOD. BUTT WELDING WILL BE TESTED BY ULTRASONIC METHOD SOUNDNESS OF WELDING SHALL BE CERTIFIED BY THE MANUFACTURER

TOLERANCES

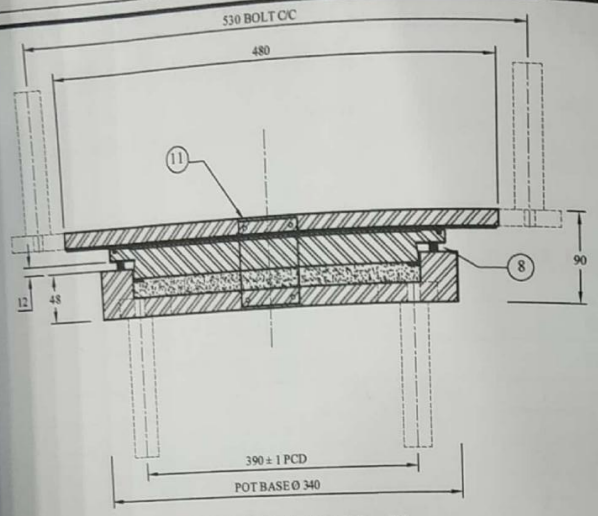
a) PLAN DIMENSIONS : - 0 TO + 5 mm
b) OVERALL HEIGHT : - 0 TO + 3 mm
c) HEIGHT OF ELASTOMER : - 0 / + 5%
d) HEIGHT OF ANY STEEL COMPONENT
   1) MACHINED : - 0 TO + 1 mm
   2) UNMACHINED : CLASS 2 OF IS :4897

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI

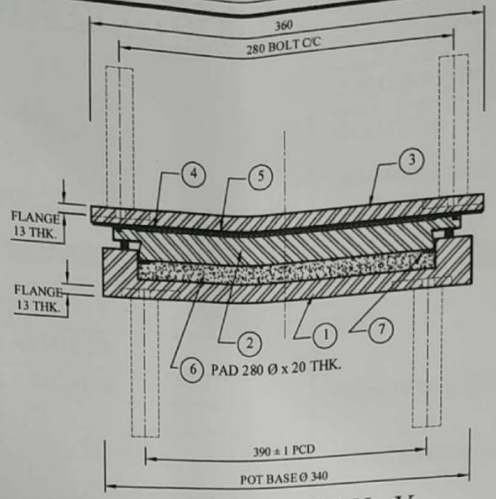
NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

REV.	DESCRIPTION	DATE

PROJECT	: CONSTRUCTION ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY, BKC TO VAKOLA JUNCTION (BESIDE VAKOLA NALLAH)
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY
CONTRACTOR	: NIRAJ CEMENT STRUCTURALS LTD
CONSULTANTS	: SPECTRUM TECHNO CONSULTANTS PVT. LTD.
TITLE	: TECHNICAL DATA SHEET OF FREE FLOAT BEARINGS SPFF- 1874 kN
DRG. NO.	: SI/NCSL/NG/18/09 - 1006 - SHEET 1 OF 2
DRG. DT.	: 21/09/2018
SCALE	NTS
REV	00
DRAWN BY	R.S.
CHECKED BY	N.G.



SECTION AT X - X



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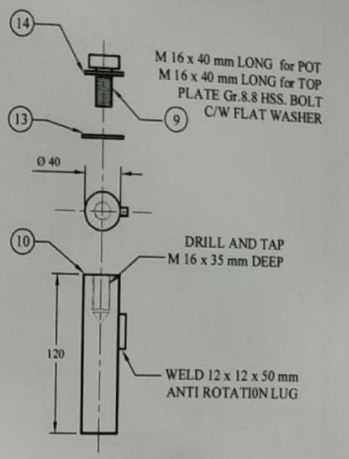
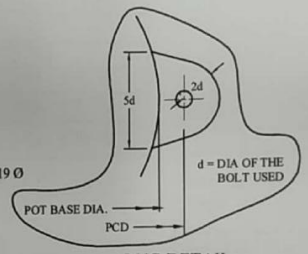
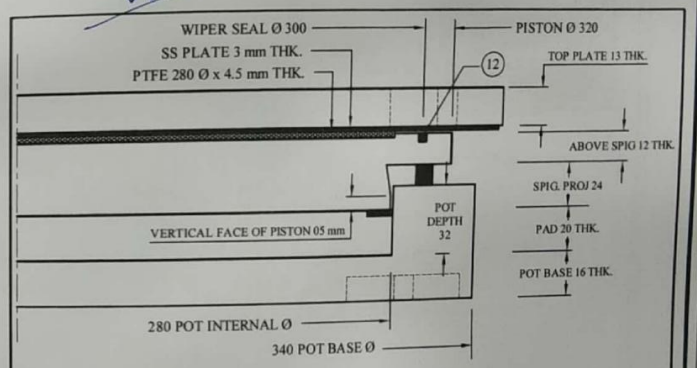


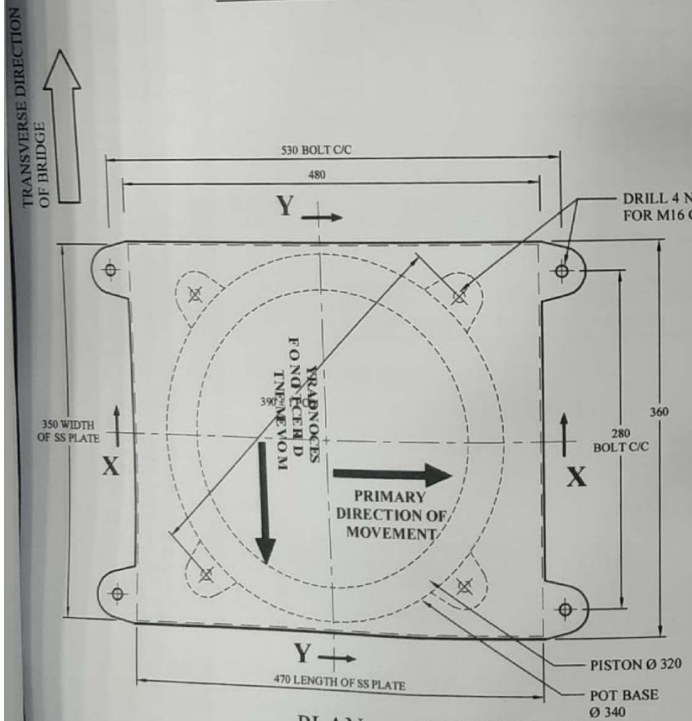
DOWEL



LUG DETAIL



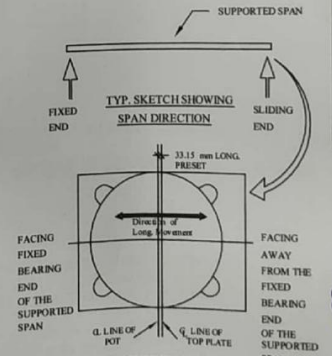
POT / PISTON DETAIL



PLAN

TRAFFIC DIRECTION OF BRIDGE

(LONGITUDINAL DIRECTION)



PRESETTING

NOTE :-

01) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
02) PCD = PITCH CIRCLE DIAMETER.
03) MARK TOP OF BEARING WITH
- SYMBOL REPRESENTING TYPE OF BEARING.
- TYPE PER CUSTOMER DRAWING.

REV.	DESCRIPTION	DATE
	SCON INFRASTRUCTURE	
PROJECT	: CONSTRUCTION ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY, BKC TO VAKOLA JUNCTION (BESIDE VAKOLA NALLAH)	
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY	
CONTRACTOR	: M/s NIRAJ CEMENT STRUCTURALS LTD	
CONSULTANTS	: SPECTRUM TECHNO CONSULTANT PVT LTD	
TITLE	: G.A.D SHOWING DETAILS OF FREE FLOAT BEARINGS SPFF- 1874 kN	DRG. DT. : 21/09/2018
DRG. NO. : SI/NCSL/NG/18/09 - 1006 - SHEET 2 OF 2		CHECKED BY N.G.
SCALE NTS	REV 00	DRAWN BY R.S.

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20 81/13 Date: 8/10/18 info@construma.in / 022-26481415 KHAR (W), MUMBAI - 400052

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI REG. 41115800

NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

DRAWING TABULATION / LISTING OF SI / CONSTRUCTION OF ELEVATED CORRIDOR , BKC TO VAKOLA JUNCTION/ 3161 KN FREE FLOAT BEARING

DRG. NO	REV No.	DATE	DETAILS
SI/NCSL/NG/18/09 - 1007 //SHEET 1 OF 2	00	21/09/2018	SCHEDULE OF DRAWINGS & TECHNICAL NOTES ID & TYPE DESIGNATION
SI/NCSL/NG/18/09 - 1007 //SHEET 2 OF 2	00	21/09/2018	GENERAL ASSEMBLY

NOTE :- COMPONENT SERIAL NOS. MENTIONED BELOW ARE SHOWN IN SHEET 2 OF 2

S. No.	DESCRIPTION	MATERIAL	QTY *	SPECIFICATION
14	FLAT WASHER	STEEL	08	STD
13	NEOPRENE WASHER		08	ELASTOMER
12	WIPER SEAL	NEOPRENE	1	ELASTOMER
11	TRANS. BRACKET	MILD STEEL	2	IS : 2062
10	DOWELS	MILD STEEL	08	IS : 2062 / IS : 226
9	ATT. BOLT M 16	Gr. 8.8 HSS.	08	IS : 1367
8	DUST SEAL	FLEXIBLE FOAM	1	BITUMEN IMPRIGNATED
7	BRASS RINGS	BRASS	2	HALF HARD BRASS
6	NEOPRENE PAD	NEOPRENE	1	MOST CLAUSE 2006.3
5	STAINLESS STEEL PLATE x 3 mm		1	AISI : 304
4	DIMPLED PTFE	PTFE BS 5400	1	Gr. A of BS : 3784
3	SLIDE PLATE	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W
2	PISTON	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W
1	POT	CAST STEEL	1	IS : 1030 Gr. 340 - 570 W

* FOR ONE BEARING

BEARING TYPE :- TYPE 10 (P45 ,P48,P51 ,P60) Straight Span Module & Type - 10 (P54 & P57) Curvature Module .

CALCULATIONS BASED ON 3161 kN FREE FLOAT BEARING

QUANTITY	-	8+4 = 12 NoS.
NEOPRENE PAD	-	365 mm DIA. x 26 mm THICK Stress 30.20 MPa ≤ 35 MPa Rotation 0.0181 Rad. > 0.0130
BRASS SEALING RINGS	-	2 Nos. (20 mm WIDE x 2 mm THK.)
PTFE	-	365 mm Dia x 4.5 mm Thick (to BS : 5400 , Dimpled).
CONCRETE STRESSES	-	UPPER 23.56 MPa ≤ 30 MPa LOWER 23.56 MPa ≤ 30 MPa
ATTACHMENT BOLTS	-	M 16 x 40 Gr. 8.8 BOLTS For POT M 16 x 40 Gr. 8.8 BOLTS For PLATE
DOWELS	-	40 mm Dia x 120 mm LONG Drill and Tap M 16 x 30 mm Concrete Stress to Ferrules 18.63 Mpa - NS, 18.63 Mpa - S

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Bearing Type	Case	Vertical Load (kN) Max.	Vertical Load (kN) Min.	Hor. Load (kN) Long.	Hor. Load (kN) Trans.	Movement L : T (mm)
Free float Bearing	Non Seismic	3161.00	1876.00	316.10	0.00	+38/-12 ; ±4
	Seismic	2615.00	1743.00	261.50	0.00	

NOTES

MATERIALS :

1. CONFINED ELASTOMER INSIDE POT WILL HAVE FOLLOWING PROPERTIES
   a) HARDNESS IRHD IS:3400 (PART II) 50 ± 5
   b) MIN. TENSILE STRENGTH MPa IS:3400 (PART I) 15.5
   c) MIN ELONGATION AT BREAK , MAX COMPRESSION SET & ACCELERATED AGING WILL BE AS PER TABLE-1 - PROPERTIES OF ELASTOMER IN IRC:83(PART III)
2. ANCHORES: HSS. BOLTS OF Gr. 8.8 & SLEEVE MATERIAL AS PER IS 2062.
3. ACESSORIES TO IS 226 / 2062.
4. CONFINED PTFE WILL BE OF UNFILLED QUALITY AND WILL HAVE REQUIRED PROPERTIES REGARDING TENSILE STRENGTH ETC. AS PER BS:5400 SEC 9.2 , BS 3784 & BS 6564. THE THICKNESS SHALL BE > OR = 4.5 MM.
5. THE STAINLESS STEEL STEEL SHALL BE STICH WELDED / SCREWED ON THE BACKING PLATE.

WELDING :

ALL WELDING WILL BE MANUAL METAL ARC PROCESS CONFORMING TO IS: 814,PRE HEATING & POST WELD STRESS RELIEVING TO BE DONE IF REQUIRED.

FINISHING :

a) ALL NONWORKING SURFACES WILL BE COATED WITH 2 COATS OF EPOXY PRIMER & ONE OR MORE COATS EACH OF EPOXY INTERMEDIATE AND FINISH PAINT. TOTAL DRY FILM THICKNESS > 160 MICRONS.
b) ANCHORE SLEEVES WILL BE CEMENT COATED AT SITE.

GREASING :

SILICON GREASE WILL BE APPLIED AT PTFE STAINLESS STEEL INTER FACE.

TESTS :

a) TESTS ON CASTING: TESTS SPECIFIED IN IS : 1030 WILL BE PERFORMED. CASTINGS SHALL BE ULTRASONICALLY TESTED & CERTIFICATES SUBMITTED. QUALITY LEVEL 3 AS PER IS : 9565.
b) ACCEPTENCE TESTS ON BEARINGS.
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TOLERANCES

a) PLAN DIMENSIONS : - 0 TO + 5 mm
b) OVERALL HEIGHT : - 0 TO + 3 mm
c) HEIGHT OF ELASTOMER : - 0 / + 5%
d) HEIGHT OF ANY STEEL COMPONENT
   1) MACHINED : - 0 TO + 1 mm
   2) UNMACHINED : CLASS 2 OF IS :4897

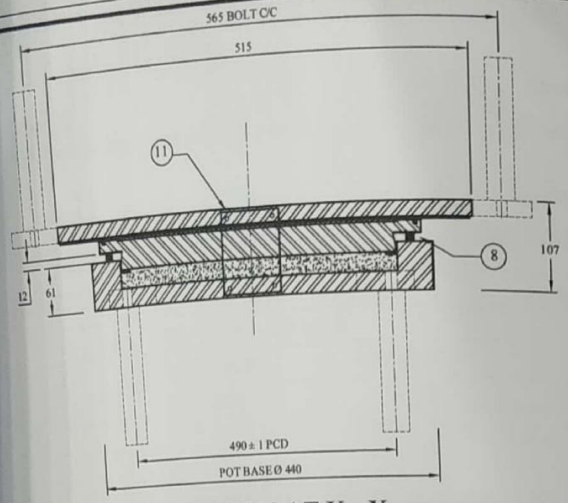
SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI

NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

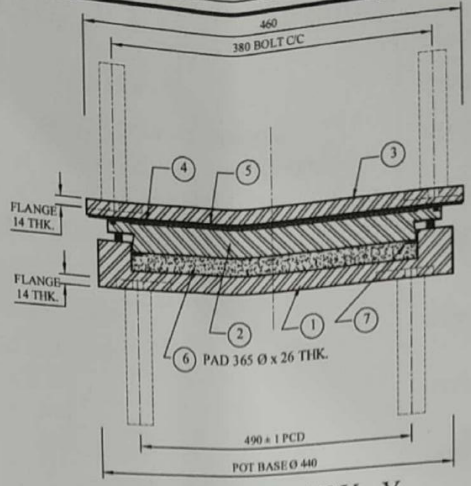
REV.	DESCRIPTION	DATE

SCON INFRASTRUCTURE

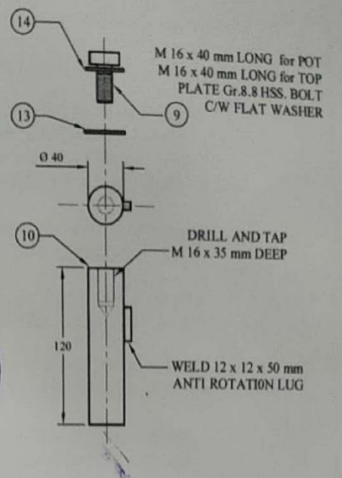
PROJECT	: CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY
CONTRACTOR	: M/s NIRAJ CEMENT STRUCTURALS LTD.
CONSULTANTS	: SPECTRUM TECHNO CONSULTANTS PVT. LTD.
TITLE	: TECHNICAL DATA SHEET OF FREE FLOAT BEARINGS SPFF- 3161 kN
DRG. NO.	: SI/NCSL/NG/18/09 - 1007 - SHEET 1 OF 2
DRG. DT.	: 21/09/2018
SCALE	NTS
REV	00
DRAWN BY	R.S.
CHECKED BY	N.G.



SECTION AT X - X



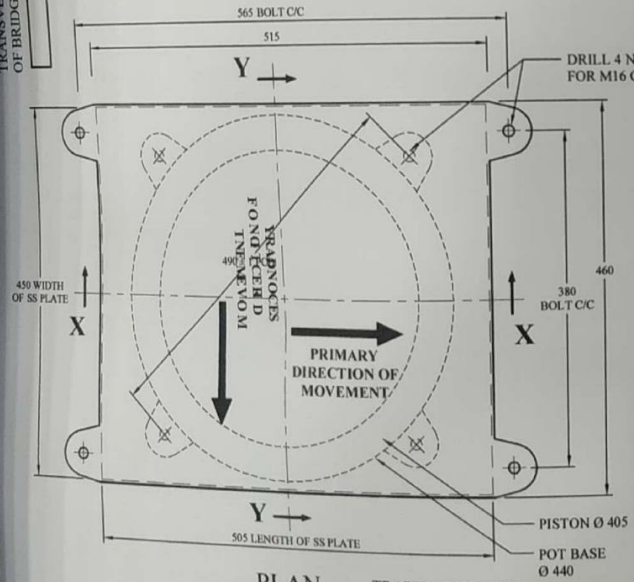
SECTION AT Y - Y



DOWEL

CONSTRUMA CONSULTANCY PVT. LTD. PROOF CHECKED REFER LETTER CCPL/20/07/13 Date: 5/10/18 info@construma.in / 022-26967415 KHAR (W), MUMBAI - 400052

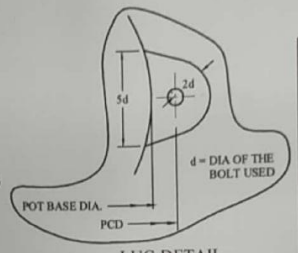
TRANSVERSE DIRECTION OF BRIDGE



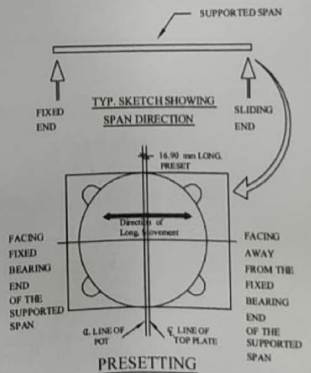
PLAN

TRAFFIC DIRECTION OF BRIDGE

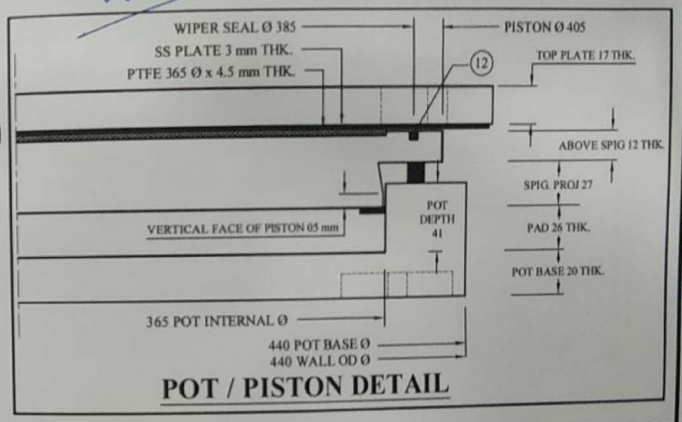
(LONGITUDINAL DIRECTION)



LUG DETAIL



PRESETTING



POT / PISTON DETAIL

SPECTRUM TECHNO CONSULTANTS PVT. LTD. NAVI MUMBAI

NOTE :-

01) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
02) PCD = PITCH CIRCLE DIAMETER.
03) MARK TOP OF BEARING WITH
- SYMBOL REPRESENTING TYPE OF BEARING.
- TYPE PER CUSTOMER DRAWING.

REV.	DESCRIPTION	DATE

SDN INFRASTRUCTURE

PROJECT	: CONSTRUCTION OF ELEVATED CORRIDOR FROM BHARAT DIAMOND BOURSE COMPANY , BKC TO VAKOLA JUNCTION
CLIENT	: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY
CONTRACTOR	: M/s NIRAJ CEMENT STRUCTURALS LTD.
CONSULTANTS	: SPECTRUM TECHNO CONSULTANTS PVT. LTD.
TITLE	: TECHNICAL DATA SHEET OF FREE FLOAT BEARINGS SPFF- 3161 kN
DRG. NO.	: SUNCSL/NG/18/09 - 1007 - SHEET 2 OF 2
DRG. DT.	: 21/09/2018
SCALE	NTS
REV	00
DRAWN BY	R.S.
CHECKED BY	N.G.

NIRAJ CEMENT STRUCTURALS LTD. MUMBAI

SCON
INFRA PRESTRESS LLP

Quality Assurance

Manual for Structural

Bearings

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092

www.sconinfra.com info@sconinfra.com

QUALITY ASSURANCE PLAN
&
SPECIFICATION

FOR
SCON BRIDGE BEARINGS

MANUFACTURER

SCON INFRASTRUCTURE MUMBAI.

Prepared By :

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……..

Reviewed By :

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Approved By :

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Quality Assurance Manual

INTRODUCTION

The main function of a bridge Bearing is to provide a connection to control the interaction of loading and movement between superstructure and substructure. A free float bearing provides free rotation in all directions and bi - axial movements. The slide guide bearing provides rotation in all direction and unidirectional movement. A fixed bearing provides rotation in all direction but restricts any movements.

MATERIALS

S. No.	Material	Specification
1.	Cast Steel	IS: 1030 Grade 280 – 520 W or Grade 340 – 570 W
2.	Mild steel	Grade B of IS: 2062 or Grade C for sub – zero condition.
3.	Poly Tetra Fluoro Ethylene (PTFE)	Grade A of BS: 3784
4.	Neoprene Pad	MOST Specifications Section 2006.3 / IRC:83 - Part II
5.	Internal Seal (Brass Ring)	IS: 410 and in accordance with Clause 927.2.7 of IRC: 83 (Part III) – 2002
6.	Wiper seal	Elastomer.
7.	Bolts and Screws	IS: 1367 (Part III) 1991.
8.	Washers	IS: 2016, IS: 6610

MANUFACTURING

Manufacturing of Bearing is done in a controlled process to ensure the quality and conformance of the product with the parameters of relevant codes and specifications. Non – Conformance Report is prepared as per "**Form No. SCON / QUALITY / FO / 003 Rev. 00"** for any deviations observed throughout the manufacturing process and the error is suitably rectified and is rerecorded for closing the NCR.

RAW MATERIAL ACCEPTANCE

All the raw materials required for the manufacturing of Pot Bearings are procured from approved vendors. Further, the incoming materials are checked for the parameters laid down in relevant codes & specification in "**Form No. SCON / QUALITY / SP / 001 Rev. 00".** The raw materials fulfilling the requirements of the above inspection plan are then dimensionally accepted vide "**Form No. SCON / QUALITY / FO / 001 Rev. 00"** and are used for the manufacturing process.

PROCESS INSPECTION

Quality check at every stage of manufacturing is carried out to ensure the conformance of the Components with the drawings or design requirements. Any deviation if observed in the manufactured or procured material at this stage are either suitably rectified by reworking or leads to the rejection of the material. The observations taken above are duly recorded in "**Form No. SCON / QUALITY / FO / 002 Rev. 00"**.

WELDING

All welding shall be conforming to IS: 816 & IS: 9595 with electrodes as per IS: 814. Preheating and post weld stress relieving shall be done, if required.

TESTING OF WELDING

Dye Penetration test and Visual Inspection as per IS: 822 is carried out to ensure soundness of welding.

FINISHING

The following measures are adopted for the corrosion protection of all non-working surfaces:

Sand/Shot Blasting of the components to achieve desired surface roughness near to white metal finish for proper bonding of the anti corrosive Epoxy Paint System. All non working surfaces as well as the surfaces to be in contact with structure shall be suitably prepared by Sand/Shot blasting to SA $2^{1/2}$ quality as per IS : 9954.

Two coats of epoxy primer and one coat each of Epoxy intermediate and finish paint to achieve a total dry film thickness of 160 microns minimum.

LUBRICATION

Silicon grease shall be applied at the interface of Stain less steel and PTFE before Testing.

CLAMPING & PRESETTING

The bearing shall be pre-set to the required dimension (if required) and clamped with the Transportation Brackets to avoid damage during the Transportation and Handling at the site.

MARKING

The bearing's designation and the longitudinal and lateral direction of the bearing shall be marked on it. Moreover each and every Bearing shall be provided with an ID Plate showing following information:

- Name of the manufacturer
- Month and year of Manufacture
- Bearing designation
- Type of bearing
- Load and movement capacity
- Centre line marking to facilitate installation
- Direction of major and minor movement, if any.
- Preset, if any.

INSPECTION / TESTING

Routine Test The Bearings manufactured are subjected to rigorous In house Testing prior to Acceptance Testing as per the relevant Specifications.

Final Test Bearings passing the In house Test requirements are offered to the Witnessing Authority for Acceptance Testing. According to the relevant Specifications, following Acceptance tests are performed on the bearings as per the lot size specified in IRC : 83 (Part III).

i) Bearings shall be checked for surface finish or any other discernible superficial defects.

ii) Bearings shall be checked for overall dimensions as per the Manufacturing tolerances specified in the codes and the specifications **Form No. SCON / QUALITY / FO / 004 Rev. 00, SCON / QUALITY / FO / 005 Rev. 00 and SCON / QUALITY / FO / 006 Rev. 00**.

iii) Bearing of each type and different Vertical Load capacity shall be load tested to 1.25 times the maximum design vertical load as shown in the drawings **Form No. SCON / QUALITY / FO / 007, Rev. 00**.

iv) Two Bearings of each type and different Vertical Load capacity selected randomly per Lot shall be tested for permissible rotation **Form No. SCON / QUALITY / FO / 008, Rev. 00**

v) A pair of movable Bearings (Free Float and Slide Guide Types) selected at random per lot shall be tested in order to determine the co-efficient of friction "μ" which shall not exceed 0.03 **Form No. SCON / QUALITY / FO / 009, Rev. 00**.

vi) For Bearings required to resist horizontal forces (Fixed and Slide Guide Types), one Bearing selected at random from each lot shall be subjected to combined Vertical and Horizontal Load Test to 1.10 times of the respective maximum design loads and forces. **Form No. SCON / QUALITY / FO / 00, Rev. 00**.

Inspection Certificate

The details of the tests carried out both in house and in the presence of the Witnessing authority are carefully recorded in the standard testing formats along with their observations. These filled up formats are then compiled and are submitted to the Witnessing Authority as Test Reports.

Details of Tests on Completed Bearings.

Vertical Load Test

The bearing is placed centrally in the test machine. A vertical load is then applied gradually in equal increments and at a constant rate up to a value 1.25 times the maximum vertical serviceability load nominated as per Contract Specifications. This load is held constant for a period of not less than 30 minutes. The vertical load is then removed.

Rotation Test

The selected bearings are centrally placed in the test press and a rotation equal to or higher than the nominated serviceability rotation is applied using a tapered plate (prefabricated to give the required rotation) placed in on the bearing. The bearing is then loaded in compression to the maximum vertical serviceability load nominated and the load is held constant for a period of not less than 30 minutes. The vertical load is then removed.

Co. efficient of Friction / Sliding Test

The given pair of Guided Sliding Bearings are orientated such that the slide plate is free to move in the direction of the horizontal force (for testing set up refer to enclosed figure). The vertical serviceability load is then applied and the slide plate is moved forward and backward once to bed the sliding surfaces. With the vertical load held constant at the maximum vertical serviceability load, the horizontal force is applied. When the slide plate began to slide the magnitude of the horizontal force is recorded. Three to Four consecutive readings are taken to obtain an average value. The average horizontal force required for movement is divided by 2, this value is then divided by the vertical serviceability load applied to obtain the coefficient of friction. The horizontal load first and then the vertical load is removed.

Combined Load / Guide Test

For Fixed Bearings

The testing assembly comprises of one Fixed Bearing and the sliding interface of one Free Float or Slide Guide type bearing of the same / higher loading capacity (for testing set up refer to enclosed figure). The Fixed Bearing is placed centrally in the test machine and the sliding interface is placed on top of the Fixed Bearing keeping the upside down with a central distribution plate in between. The sliding interface is orientated such that it is free to move in the direction of the horizontal force. The vertical load equal to 1.10 times the maximum vertical Serviceability load nominated as per contract specifications is then applied on to the bearings. With the vertical load held constant at 1.10 times the maximum vertical serviceability load, the horizontal force is applied gradually in equal increments and at a constant rate up to a value 1.10 times the maximum horizontal serviceability load nominated. This load is held constant for a period of not less than 30 minutes. The horizontal load first and then the vertical load is removed.

For Guided Bearings

The testing assembly comprises of one Slide Guide Bearing and the sliding interface of one Free Float or Slide Guide type bearing of the same / higher loading capacity (for testing set up refer to enclosed figure). The Slide Guide Bearing is placed centrally in the test machine such that the direction of the movement of the Bearing shall be normal to the line of action of horizontal force and the sliding interface is placed on top of the Slide Guide Bearing keeping the upside down with a central distribution plate in between. The sliding interface is orientated such that it is free to move in the direction of the horizontal force. The vertical load equal to 1.10 times the maximum vertical serviceability load nominated as per contract specifications is then applied on to the bearings. With the vertical load held constant at 1.10 times the maximum vertical serviceability load, the horizontal force is applied gradually in equal increments and at a constant rate up to a value 1.10 times the maximum horizontal serviceability load nominated. This load is held constant for a period of not less than 30 minutes. The horizontal load first and then the vertical load is removed.

FINAL INSPECTION

After Tests are completed, the tested bearings are removed from the test machine, dismantled and are examined for any signs of distress, warping, scoring or other permanent defects which may affect the serviceability or durability of the bearing.

PACKING & TRANSPORTATION

The bearings thus approved by the Witnessing Authority after complete Testing and Quality Check are then properly packed with heavy duty polythene sheets and are secured over wooden crates. These Bearings are then Transported to the site.

Installation, Maintenance and Replacement of Pot / Pot – cum – PTFE Bearings

For Installation, Maintenance and Replacement of Pot / Pot – cum – PTFE Bearings, please refer to enclosed manuals.

ANNEXURES

Incoming Quality Check Plan

Quality Check Stage Inspection Report

Incoming Dimension Check Report

Non – Conformance Report Form

Physical Dimension Check Format for Fixed Bearings

Physical Dimension Check Format for Slide Guide Bearings

Physical Dimension Check Format for Free Float Bearings

Vertical Load Test Format for Pot Bearings (1.10 times / 1.25 times)

Rotation Test Format

Co – efficient of friction Test format

Combined Vertical and Horizontal Load Test Format

Testing Procedure for POT / POT-cum-PTFE and PIN Bearings

Figure showing Horizontal Load Test Set up for Fixed Bearings

Figure showing Horizontal Load Test Set up for Guided Bearings

Figure showing Co Efficient of Friction Test Set up for Guided Bearings

Figure showing Horizontal Load Test Set up for Pin Fixed Bearings

Figure showing Horizontal Load Test Set up for Pin Guided Bearings

Figure showing Co Efficient of Friction Test Set up for Pin Guided Bearings

Methodology for Installation and Replacement of Pot and Pin Bearings

Guide Lines for Maintenance of Pot and Pin Bearings

SCON INFRA PRESTRESS LLP

INCOMING QUALITY CHECK PLAN

Form No. :- SCON / QUALITY / SP / 001 **Rev. No. : 00**

S#	Component	Tests to be Conducted	No. of Sample	Reference Code	Acceptance Criteria	Testing Agency	Remarks
1	**Cast Steel**	* Physical Tests: 1. Ultimate Tensile Strength (U.T.S.) 2. Yield Stress 3. % Elongation 4. Ultrasonic Test (Level-3)	One integral piece per batch	IS: 1030	IS: 1030	Manufacturer's / Independent Laboratory	Manufacturer's Test certificates shall be furnished. However, random tests may be carried out by the Inspector.
		* Chemical Tests: C, Mn, Si, S and P	- do -	- do -	- do -	- do -	- do -
2.	**Mild Steel for Anchor Sleeves**	* Physical Tests: 1. Ultimate Tensile Strength (U.T.S.) 2. Yield Stress 3. % Elongation	One piece per batch	IS: 2062	IS: 2062	- do -	Manufacturer's Test certificates shall be furnished. However, random tests may be carried out by the inspector.
		* Chemical Tests:		- do -	- do -	- do -	- do -
		C, Mn, Si, S and P	- do -				
3.	**Mating Surface**	1. Hardness	-	-	300 BHN	In house	-
4.	**Stainless Steel**	* Chemical Tests: C, Mn, Ni, Cr, Si, S, Mo and P	One piece per lot of procurement	AISI: 316L / AISI: 304	Test Certificate	Manufacturer's / Independent Laboratory	Manufacturer's Test certificates shall be furnished. However, random tests may be carried out by the inspector in absence of
5.	**PTFE**	1. Tensile strength at break. 2. Elongation at break. 3. Specific gravity 4. urometer Hardness 5. Resistance to Heat 6. Dimensional stability	One piece per lot of procurement	BS: 3784 and BS : 6564 and as per relevant ASTM / BS Testing Procedures	Test Certificate	Manufacturer's / Independent Laboratory	PTFE manufacturer's Test Certificate shall be obtained.
6.	**Elastomeric (Neoprene)**	* Physical Tests: 1. Hardnes 2. Minimum Tensile Strength 3. Minimum Elongatio 4. Maximum Compression se 5. Accelerated Ageing	From batches at random	IS:3400 (Part II) IS:3400 (Part I) IS:3400 (Part I) IS:3400 (Part X) IS:3400 (Part IV)	IRHD 50 ± 5 15.5 N/mm^2 400 % As per IRC: 83 (Part II) - do -	Manufacturer's Laboratory	Certificate of origin / shipping invoice towards import of chloroprene shall be furnished for verification. Manufacturer's Test Certificate shall be provided. However, random test may be carried out in the presence of inspector.
7.	**Bolts and Nuts**	Physical & Chemical Tests	One for total lot	IS:1367	Test Certificate	Manufacturer's Laboratory	Manufacturer's/ Dealers Test Certificate shall be

IMP :- In addition to the parameters specified above, the Items shall be physically verified and visually and dimensionally inspected

INFRA PRESTRESS LLP

Form No.SCON / QUALITY / FO / 002 - Rev 00

STAGE INSPECTION REPORT – BEARINGS

Report No. :
Dated :
Customer :
Quantity Offered :

Stage of Inspection
Drg. No.
Work Order No.
Bearing / Component Description

Casting [ ] Machined [ ]
Quantity Accepted
Quantity Rejected

Stages		Parameters	Standard	Observed Value								Remarks
			I. D. No. fi									
Stage I-Dimensional Check of Components	a.	Pot Base Effective Diameter										
	b.	Pot Base Bolt PCD										
	c.	Pot Inner Diameter										
	d.	Pot Wall Outer Diameter										
	e.	Pot Total Thickness										
POT	f.	Pot Inside Depth										
	g.	Pot Flange Thickness										
PISTON	a.	Piston Base Eff. Diameter (FX)										
	b.	Piston Step Diameter (FX)										
	c.	Piston Flange Thickness (FX)										
	c.	Piston OD (SG & FF)										
	d.	Piston size between Guides (SG)										
	e.	Length of Piston Flat (SG)										
	f.	Spigot Major Diameter										
	g.	Piston thickness above Spigot										
	h.	Spigot Projection										
	i.	Vertical Face of Piston Flat										
TOP PLATE	a.	Length of Top Plate										
	b.	Width of Top Plate										
	c.	Longitudinal Bolt C/C										
	d.	Transverse Bolt C/C										
	e.	Top Plate Thickness										
	f.	Width of Guide Bar										
	g.	Height of Guide Bar										
	h.	Guide Bar inside Dimension										
	i.	S/S Plate Thickness										
D. FINISHED BEARING	a.	Total Height of Bearing										
	b.	Final Assembly Checked or Not										

INFRA PRESTRESS LLP

Form No.SCON / QUALITY / FO / 002 - Rev 00

Report No. :

Work Order No. :

Dated :

Dated :

Parameters for Visual Inspection :-

A	Finish of Steel Components (Blow Holes, Casting Defects, Tool Marks and Filling Material – Putty Finish , if applied)	
B	Fit of Neoprene Pad (No Air Entrapment and thin layer of Silicon Grease Applied)	
C	Fit of brass Rings (Placement and Edges of Brass Rings)	
D	Fit of PTFE to Piston (Uniform Projection with Dimples ^ to the Principle Direction of Movement)	
E	Fit of PTFE to Piston (No projection of Araldite from PTFE Surface and Dimples filled with Silicon Grease)	
F	Weld of S/S to Piston Flats (No Projections of S/S or Weld, Uniform and Flat Finis h with Proper Buffing and Polishing)	
G	Weld of S/S Plate and Strips to Top Plate (No Air Entrapment, Projection of S/S or Weld, Proper Buffing and Polishing)	
H	Guide Bars (Must be Parallel to each other with Bottom Face and Internal Side face Flat and Uniform including S/S)	
I	Chamfering and Deburring of Bolt Holes in all the Components	
J	Each and Every Component Quality checked and Accepted or Not (If accepted under deviations, carefully re-check)	
K	Properly Cleaned Components Prior to Assembly	
L	Fit of Pot – Piston – Top Plate (Assembly aspect for components accepted under deviation)	
M	Orientation of Piston with respect to Guide Bars (Piston Flat to Face the Guide Bars)	
N	Fit of Dust Seal and Wiper Seal	
O	Paint Coating Thickness (Paint on all exposed Surfaces including the underside of Pot)	
P	Marking on top of Bearing.	
Q	Offset marking on top of Bearing , If Applicable.	
R	Details of I. D. Plate	
S	Fit Of Transport Bracket	
T	Transport Bracket shall be Painted Red.	

Prepared By :-

Name : -

Sign :-

SCON INFRA PRESTRESS LLP

INCOMING QUALITY DIMENSIONS CHECK PLAN

Form No. :- SCON / QUALITY / FO / 001 **Rev. No. : 00**

Report No.: Date:
MRN No.or Challan No.
P. O. / W. O. No. :
In House M/c / Vendor Code:
Material Description / Process Details:
Customer / Project Details:
Reference Drawing No & Rev :
Internal Work Order No.

S. No.	Dimension Description	Theoritical Dimension	Product ID No.	Remarks

COMMENTS :	**Q. C. SEAL** (ACCEPTED / REJECTED)
TEST CERTIFICATE NO.:	Q. C. Inspector
FILED IN FILE NO. : ……..	Q. C. Engr./GM (Tech)

NON – CONFORMANCE REPORT

Ref No.: Dated:

Form No. SCON / QUALITY / FO / 003
Rev.00

Item Description:

Quantity:
P.O.No./ W.O.No.:

Drawing/Specs.:
Customer:

S.No.	Nature of Rejection	Quantity

S.No.	Reasons for Non – Conformance	Quantity

(Quality Incharge)

☐ Accept as it is ☐ Rework ☐ Reject

Corrective / Preventive Action Suggested:-

GM (Works) / Design Incharge

Prepared By & Date:- Received By & Date:-

Corrective / Preventive Action Taken:-

GM (Works) / Manufacturing Incharge

Re-offered By & Date:- Re-checked by Quality:-
Closed By & Date

INFRA PRESTRESS LLP

PHYSICAL DIMENSION CHECK OF BEARINGS

Form No. SCON / QUALITY / FO / 004
Rev.00

REPORT No. - DATED -
PROJECT -
TYPE OF BEARING -**VFX : MT. FIXED TYPE BEARING**
DATE -

S. No	DESCRIPTION	THEORETICAL DIM (mm)	TOLERANCE	DIMENSION OBSERVED (mm)									
	SR. NO. OF BEARING (BEARING MARK)												
1	**POT DIMENSION**												
	a) Pot Base Plan Dia.		**- 0 / + 5 mm**										
	b) Bolt C/C (PCD)		**+ / - 1 mm**										
	c) Flange Thickness		**- 0 / + 1 mm**										
2	**PISTON DIMENSION**												
	a) Piston Base Plan Dim.		**- 0 / + 5 mm**										
	b) Flange Thickness		**- 0 / + 1 mm**										
	c) Bolt C/C		**+ / - 1 mm**										
	d) Above Piston Height		**- 0 / + 1 mm**										
	e) Spigot Projection		**- 0 / + 1 mm**										

S. No	DESCRIPTION	THEORETICAL DIM (mm)	TOLERANCE	DIMENSION OBSERVED (mm)									
	SR. NO. OF BEARING (BEARING MARK)												
1	**POT DIMENSION**												
	a) Pot Base Plan Dia.		**- 0 / + 5 mm**										
	b) Bolt C/C (PCD)		**+ / - 1 mm**										
	c) Flange Thickness		**- 0 / + 1 mm**										
2	**PISTON DIMENSION**												
	a) Piston Base Plan Dim.		**- 0 / + 5 mm**										
	b) Flange Thickness		**- 0 / + 1 mm**										
	c) Bolt C/C		**+ / - 1 mm**										
	d) Above Piston Height		**- 0 / + 1 mm**										
	e) Spigot Projection		**- 0 / + 1 mm**										

Tested By:

Witnesed By :

For SCON

PHYSICAL DIMENSION CHECK OF BEARINGS

Form No. SCON / QUALITY / FO / 005
Rev.00

REPORT No. .
DATED -
PROJECT .

TYPE OF BEARING .	VFF : MT. FREE FLOAT TYPE BEARING		DIMENSION OBSERVED (mm)						
DATE .									
S. No	**DESCRIPTION**	**THEORETICAL DIM (mm)**	**TOLERANCE**						
	SR. NO. OF BEARING (BEARING MARK)								
	POT DIMENSION								
1	1. Pot Base Plan Dia.		**- 0 / + 5 mm**						
	2. Bolt C/C (PCD)		**+ / - 1 mm**						
	3. Flange Thickness		**- 0 / + 1 mm**						
	TOP PLATE								
2	1. Plan Dimension		**- 0 / + 5 mm**						
	2. Bolt C/C		**+ / - 1 mm**						
	3. Base Thickness		**- 0 / + 1 mm**						

S. No	**DESCRIPTION**	**THEORETICAL DIM (mm)**	**TOLERANCE**	DIMENSION OBSERVED (mm)						
	SR. NO. OF BEARING (BEARING MARK)									
	POT DIMENSION									
1	1. Pot Base Plan Dia.		**- 0 / + 5 mm**							
	2. Bolt C/C (PCD)		**+ / - 1 mm**							
	3. Flange Thickness		**- 0 / + 1 mm**							
	TOP PLATE									
2	1. Plan Dimension		**- 0 / + 5 mm**							
	2. Bolt C/C		**+ / - 1 mm**							
	3. Base Thickness		**- 0 / + 1 mm**							

Tested By:

Witnesed By :

_____

_____

For SCON

INFRA PRESTRESS LLP

PHYSICAL DIMENSION CHECK OF BEARINGS

Form No. SCON / QUALITY / FO / 006
Rev.00

REPORT No. -
PROJECT -
TYPE OF BEARING -**VSG :** **MT. SLIDE GUIDE TYPE BEARING**
DATE -

DATED -

S. No.	DESCRIPTION	THEORETICAL DIM (mm)	TOLERANCE	DIMENSION OBSERVED (mm)					
	SR. NO. OF BEARING (BEARING MARK)								
	POT DIMENSION								
	a) Pot Base Plan Dia.		**- 0 / + 5 mm**						
1									
	b) Bolt C/C (PCD)		**+ / - 1 mm**						
	c) Flange Thickness		**- 0 / + 1 mm**						
	TOP PLATE								
	a) Plan Dimension		**- 0 / + 5 mm**						
	b) Bolt C/C (PCD)		**+ / - 1 mm**						
2	c) Total Thickness		**- 0 / + 1 mm**						
	d) Base thickness		**- 0 / + 1 mm**						
	e) Guide Width		**- 0 / + 1 mm**						
	f) Guide Height		**- 0 / + 1 mm**						

S. No.	DESCRIPTION	THEORETICAL DIM (mm)	TOLERANCE	DIMENSION OBSERVED (mm)					
	SR. NO. OF BEARING (BEARING MARK)								
	POT DIMENSION								
	a) Pot Base Plan Dia.		**- 0 / + 5 mm**						
1									
	b) Bolt C/C (PCD)		**+ / - 1 mm**						
	c) Flange Thickness		**- 0 / + 1 mm**						
	TOP PLATE								
	a) Plan Dimension		**- 0 / + 5 mm**						
	b) Bolt C/C (PCD)		**+ / - 1 mm**						
2	c) Total Thickness		**- 0 / + 1 mm**						
	d) Base thickness		**- 0 / + 1 mm**						
	e) Guide Width		**- 0 / + 1 mm**						
	f) Guide Height		**- 0 / + 1 mm**						

Tested By:

Witnesed By :

For SCON

SCON INFRA PRESTRESS LLP

Form No. : SCON / QUALITY / FO / 06 REV - 00

Vertical Load Test Format (1.1 Times)

Report No : Date :

Project :-

Commentary :- The bearing is placed centrally in the test machine. A vertical load is then applied gradually in equal increments and at a constant rate up to a value 1.1 times the maximum vertical serviceability load nominated as per Contract Specifications / Approved Shop Drawing. This load is held constant for a period of not less than 30 minutes. The vertical load is then removed. The Bearing is dismantled & checked for any permanent deformation.

Type of Test	:-	**Load Test for POT Bearings**	
Date of Testing	:-		
Quantity Offered	:-	Nos.	
Design Load	:-	0.00 MT	
Vertical Ram Area	:-	5024.00 cm^2	
Test Load	:-	0.00 MT	**(1.1 Times of Design Load)**
Type of Bearing	:-		
Test Load (Calculated)	:-	0.00 MT	
Test Load (Actual)	:-	0.00 MT	
Pressure Gauge Reading (Calculated)	:-	0.00 Kg / cm^2	
Pressure Gauge Reading (Actual)	:-	0.00 Kg / cm	
Duration of Load	:-	30 Min.	
Serial Nos. of Bearings	:-		

Remarks :-

01) Test Load = 1.1 Times of Design Vertical Load . Yes / No

02) Is there any Permanent Deformation or Permanent set in Neoprene pad after Vertical Load test. Yes / No

Tested By :- Witnessed By :-

For SCON

INFRA PRESTRESS LLP

Form No. : SCON / QUALITY / FO / 07 REV - 00

Vertical Load Test Format (1.25 Times)

Report No : Date :

Project :-

Commentary :- The bearing is placed centrally in the test machine. A vertical load is then applied gradually in equal increments and at a constant rate up to a value 1.25 times the maximum vertical serviceability load nominated as per Contract Specifications / Approved Shop Drawing. This load is held constant for a period of not less than 30 minutes. The vertical load is then removed. The Bearing is dismantled & checked for any permanent deformation.

Type of Test	:-	**Load Test for POT Bearings**	
Date of Testing	:-		
Quantity Offered	:-	Nos.	
Design Load	:-	0.00 MT	
Vertical Ram Area	:-	5024.00 cm^2	
Test Load	:-	0.00 MT	**(1.1 Times of Design Load)**
Type of Bearing	:-		
Test Load (Calculated)	:-	0.00 MT	
Test Load (Actual)	:-	0.00 MT	
Pressure Gauge Reading (Calculated)	:-	0.00 Kg / cm^2	
Pressure Gauge Reading (Actual)	:-	0.00 Kg / cm	
Duration of Load	:-	30 Min.	
Serial Nos. of Bearings	:-		

Remarks :-

01) Test Load = 1.1 Times of Design Vertical Load . Yes / No

02) Is there any Permanent Deformation or Permanent set in Neoprene pad after Vertical Load test. Yes / No

Tested By :- Witnessed By :-

For SCON

Form No. : SCON/ QUALITY / FO / 008
Rev - 00

Rotation Test Format

Report No : Date:

Project:

Commentary :-The selected bearings are centrally placed in the test press and a rotation equal to or higher than the nominated serviceability rotation is applied using a tapered plate (prefabricated to give the required rotation) placed in on the bearing. The bearing is then loaded in compression to the maximum vertical serviceability load nominated and the load is held constant for a period of not less than 30 minutes. The vertical load is then removed.

Type of Test	:-	**Rotation Test for POT Bearings**
Date of Testing	:-	
Quantity Offered	:-	Nos.
Design Load	:-	0.00 MT
Vertical Ram Area	:-	5024.00 cm^2
Test Load	:-	0.00 MT
Type of Bearing	:-	
Test Load (Calculated)	:-	0.00 MT
Test Load (Actual)	:-	0.00 MT
Preassure Gauge Reading (Calculated)	:-	0.00 Kg / cm^2
Preassure Gauge Reading (Actual)	:-	0.00 Kg / cm^2
Duration of Load	:-	30 Min.
Value of Rotation	:-	0.018 Radians
Serial Nos. of Bearings	:-	

Remarks :-

1) Is there any Permanent Deformation or Permanent set in Neoprene pad after Vertical Load test. Yes / No

2) The Behaviour of the Bearing under rotation test was observed to be Satisfactory / ~~Unsatisfactory~~

Tested By :- Witnessed By :-

For SCON

INFRA PRESTRESS LLP

Form No. : SCON / QUALITY / FO / 009
Rev - 00

Test Format for Co - efficient of Friction

Report No. :- Date :
Project :-

Commentary :-The given pair of Guided Sliding Bearings are orientated such that the slide plate is free to move in the direction of the horizontal force. The vertical serviceability load is then applied and the slide plate is moved forward and backward once to bed the sliding surfaces. With the vertical load held constant at the maximum vertical serviceability load, the horizontal force is applied. When the slide plate began to slide the magnitude of the horizontal force is recorded. Three to Four consecutive readings are taken to obtain an average value. The average horizontal force required for movement is divided by 2, this value is then divided by the vertical serviceability load applied to obtain the coefficient of friction. The horizontal load first and then the vertical load is removed.

Type of Test	:-	Test for Determination of Co - efficient of Friction of POT - cum - PTFE Bearings.
Date of Testing	:-	
Quantity Offered	:-	Nos.
Type of Bearing	:-	
Serial Nos. of Bearings	:-	
Design Vertical Load	:-	MT
Test Load Vertical	:-	MT
Vertical Ram Area	:-	5024.00 cm^2
Horizontal Ram Area	:-	706.50 cm^2

Preasure Guage Reading for	Load Vertical	Preasure Guage Reading for	Load Horizontal (	Average Load	

Remark :-

Average Coefficient of Friction is found to be < 0.03

Satisfactory / ~~Unsatisfactory~~

Tested By :- Witnessed By :-

Test Format for Combined Vertical & Horizontal Load Testing of Fixed Bearings

Report No :- Date :
Project :-

Commentary :- The testing assembly comprises of one Fixed Bearing and the sliding interface of one Free Float or Slide Guide type bearing of the same / higher loading capacity (for testing set up refer to enclosed figure). The Fixed Bearing is placed centrally in the test machine and the sliding interface is placed on top of the Fixed Bearing keeping the upside down with a central distribution plate in between. The sliding interface is orientated such that it is free to move in the direction of the horizontal force. The vertical load equal to 1.10 times the maximum vertical Serviceability load nominated as per contract specifications is then applied on to the bearings. With the vertical load held constant at 1.10 times the maximum vertical serviceability load, the horizontal force is applied gradually in equal increments and at a constant rate up to a value 1.10 times the maximum horizontal serviceability load nominated. This load is held constant for a period of not less than 30 minutes. The horizontal load first and then the vertical load is removed.

Type of Test :- **Combined Vertical & Horizontal Load Testing of POT Bearings.**
Type of Bearing :-
Date of Testing :-
Quantity Offered :- Nos.

Design Vertical Load	:-	MT	Design Horizontal Load (Resultant Horizontal Load)	:-	MT
Vertical Ram Area	:-	5024.00 cm^2	Horizontal Ram Area	:-	706.50 cm^2
Vertical Test Load (1.10 Times of Design Load)	:-	MT	Horizontal Test Load (1.10 Times of Design Load)	:-	MT
Vertical Test Load (Calculated)	:-	MT	Horizontal Test Load (Calculated)	:-	MT
Vertical Test Load	:-	MT	Horizontal Test Load	:-	MT
(Actual) Preassure Gauge Reading	:-	Kg / cm^2	(Actual) Preassure Gauge Reading	:-	Kg / cm^2
(Calculated) Preassure Gauge Reading	:-	Kg / cm^2	(Calculated) Preassure Gauge Reading	:-	Kg / cm^2

(Actual) (Actual)
Duration of Load :- 30 Min.
Serial Nos. of Bearings :-

Remarks :-

01) Test Load = 1.10 Times of Design Vertical Load & Horizontal Load Yes / No

2) Is there any Permanent Deformation or Permanent set in Neoprene pad after the test. Yes / No

Tested By :- Witnessed By :-

[Type here]

SCON INFRA PRESTRESS LLP

Test Format for Combined Vertical & Horizontal Load Testing of Guided Bearings

Report No :- Date :

Project :-

Commentary :- The testing assembly comprises of one Slide Guide Bearing and the sliding interface of one Free Float or Slide Guide type bearing of the same / higher loading capacity. The Slide Guide Bearing is placed centrally in the test machine such that the direction of the movement of the Bearing shall be normal to the line of action of horizontal force and the sliding interface is placed on top of the Slide Guide Bearing keeping the upside down with a central distribution plate in between. The sliding interface is orientated such that it is free to move in the direction of the horizontal force. The vertical load equal to 1.10 times the maximum vertical serviceability load nominated as per contract specifications is then applied on to the bearings. With the vertical load held constant at 1.10 times the maximum vertical serviceability load, the horizontal force is applied gradually in equal increments and at a constant rate up to a value 1.10 times the maximum horizontal serviceability load nominated. This load is held constant for a period of not less than 30 minutes. The horizontal load first and then the vertical load is removed.

Type of Test	:-	**Combined Vertical & Horizontal Load Testing of Guided Bearings.**			
Type of Bearing	:-				
Date of Testing	:-				
Quantity Offered	:-	Nos.			
Design Vertical Load	:-	MT	Design Horizontal Load (Resultant Horizontal Load)	:-	MT
Vertical Ram Area	:-	5024.00 cm^2	Horizontal Ram Area	:-	706.50 cm^2
Vertical Test Load (1.10 Times of Design Load)	:-	MT	Horizontal Test Load (1.10 Times of Design Load)	:-	MT
Vertical Test Load (Calculated)	:-	MT	Horizontal Test Load (Calculated)	:-	MT
Vertical Test Load (Actual)	:-	MT	Horizontal Test Load (Actual)	:-	MT
Preassure Gauge Reading (Calculated)	:-	Kg / cm^2	Preassure Gauge Reading (Calculated)	:-	Kg / cm^2
Preassure Gauge Reading (Actual)	:-	Kg / cm^2	Preassure Gauge Reading (Actual)	:-	Kg / cm^2
Duration of Load	:-	30 Min.			
Serial Nos. of Bearings	:-				

Remarks :-

01) Test Load = 1.10 Times of Design Vertical Load & Horizontal Load Yes / No

2) Is there any Permanent Deformation or Permanent set in Neoprene pad after the test. Yes / No

Tested By :- Witnessed By :-

For SCON ----------

Form No. : SCON / QUALITY / FO /
13 Rev - 00

INSTALLATION MANUAL FOR BRIDGE BEARINGS

General –

Procedure adopted for installation of Bridge Bearings, is influenced both by the technique of construction, and the experience or preference of the contractor concerned.

Installation methods will vary greatly between in-situ structures compared to a beam type construction, and again, in turn, if a segmental box type construction is used.

a) Elevation –

Bearings should be set to the required elevation as shown on construction drawings, within the tolerances nominated in the contract, but typically, Plus 0 to minus 3 mm from true elevation.

Note:

It is unusual for Pot Bearings to be set to a gradient but if so required, and then a tolerance of 0.5% would apply.

b) Bedding Material –

Choice of bedding material is influenced by several considerations including

- Method of installation of the bearings
- Volume to be filled,
- MPa strength required,
- Required setting time.
- Flow able or dry pack.

c) Setting of Bearings –

It is unusual for bearings to be restrained by friction alone. Thus, shear keys, dowels, bolts etc., of some type, projecting from the bearing, will be required to be set within the substructure, and likewise, within the superstructure**.**

Bearings will be set perfectly horizontal unless otherwise nominated on the drawings. Levels for setting of bearings shall be taken from the bottom plate of bearing – not the top plate.

d) Substructure -

A pedestal of suitable size & strength shall be formed complete with block outs to suit the bearing's shear key, dowels etc, within the reinforcement cage. Adequate

edge cover to reinforcement shall be maintained. Edge cover to the side of bearing should typically be not less than 150 mm on all sides, together with the required edge distance from bearing plate(s).]

e) Method of Installation – I Method -

1. Wooden casing for the pedestal is prepared on the pier/abutment cap, with inner dimension as per the size of pedestal. Necessary reinforcement bars and Dowels along with wooden template are placed inside the wooden casing.
2. Concrete of specified grade is poured inside the wooden casing for Pedestal taking extreme care to ensure the correct level, alignment & true horizontal surface of the finished concrete and allowed to set at least for a day before commencing the Installation of the Bearing.
3. Cement slurry are poured over the bearing area on the pedestal; the bearings are placed and the foundation nuts are tightened. This removes unevenness in pedestal top and gives uniform support for bearing. Levels for the bearings top surface are cross checked after placing of all the bearings to ensure uniformity of level.
4. Dowels with the help of Anchor bolts are fixed to the top plate of bearings.
5. Reinforcement for superstructure is placed onto the bearings and the bearings are covered with cotton waste from sides to protect ingress of foreign material.
6. Concrete is poured for the super structure and allowed to cure.
7. Temporary fixture provided for the bearings are removed and the bearings are then ready for use.

Note: It must be fully ensured that the C/C or PCD dimensions of the dowels casted inside the pedestal should exactly match with those mentioned in the drawings submitted by the manufacturer.

II Method -

1. After construction / curing of pedestal; false bearing in the form of wooden plank or sand jack are placed to the side of the pedestal up to the required height.
2. Anchor Dowels for the bearings are placed at the accurate position by welding it to the pedestal reinforcement and at the soffit reinforcement of the super structure before concreting.
3. Concrete is now poured for the pedestal as well as superstructure. At this stage the bearing is placed in position. Then the whole superstructure is lowered down to its final position by jacking up the end diaphragm using hydraulic jack and removing the wooden plank or by releasing sand from the sand jack and the bolts is tightened to the Dowels through the top & bottom bearings plates.

f) Final Consideration –

i) Transportation Brackets– The transportation brackets must be removed at an appropriate time prior to the bearings being required to accommodate movement and / or rotation.

ii) Load must not be transferred to the bearing until all concrete has set to required strength.

iii) Any voids etc, left as a result of setting of the bearings, must be adequately back filled prior to loading the bearing.

iv) Attachment bolts should be torque to `snug tight' after the concrete has obtained required strength.

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METHODOLOGY FOR FIXING OF DOWELS

(IN PRE CAST STRUCTURE)

OPTION A

Sub Structure

A pedestal of the suitable size and strength shall be formed complete with block outs to suit dowels within the reinforcement cage. Adequate edge cover to the reinforcement shall be maintained. The bearing shall be leveled and held in the position with reference to the base plate. The leftover space around the dowel after its placement is to be filled by pressure grouting.

Super Structure

Using templates, recess may be left in the structure (as shown in the figure) and a pipe of approximately 25 mm dia. is to be attached to the pocket to facilitate pouring of the grout. The size of the recess shall be suitably larger than the dowel size (typ. 100 mm dia x 125 mm long for a dowel of size 40 mm dia x 100 mm long) to facilitate seating of the dowels inside the pockets even in case the position of the bolt holes provided in the bearing differs with those marked on the structure at the time of final placement. At the time of the bearing setting, after maintaining the levels, the recess is to be filled with cement grout through pipes.

In case the super-structure has been already casted, the recess around the dowels is made by drilling and is filled by cement grout by pressure grouting.

Use Template for dowel positioning (Ref: MOST Specification clause 2006.6.3

i) Template with required rigidity and matching holes corresponding to the base and top plates of the bearing shall be used.

ii) All the dowels shall be fitted to the lower face of the template using temporary anchor bolts and steel washers.

iii) The template assembly shall be located with regard to level and alignment. It shall be ensured that the top of the dowel lie in a horizontal plane at the required elevation. The dowels (if required) shall be tied/welded to reinforcements to avoid displacement during concreting.

iv) Concreting of the pedestal/pier cap shall be done to a level leaving a gap of 25-50 mm below the template.

v) The template and steel washers shall be removed prior to placement of the bearing assembly with temporary clamps. The bearing assembly shall be fitted to the dowels with the help of anchor bolts and elastomer washers. Level at the bearing shall be checked.

vi) The gap below the bearing assembly shall be grouted with high strength non- shrink free flowing rapid setting cementitious grout like Conbextra GP2 or equivalent.

At all times, the bearing must be held firm in order that subsequent grouting does not displace the bearing from its true position. Any voids left as a result to setting of the bearings, ie; removal of templates etc, must be adequately back filled with correct material prior to loading of the bearing.

OPTION B

In this option the dowels supplied by the manufacturer are to be embedded in the concrete of the pedestal as well as the superstructure (Girders) at the time of their casting itself using proper templates to ensure that the position of the dowels embedded in the structure exactly matches with the bolt holes provided in the bearing top and bottom plates

INFRA PRESTRESS LLP

METHODOLOGY FOR THE REPLACEMENT OF EXISTING STEEL BEARINGS WITH POT-cum-PTFE BEARINGS

The POT / POT-cum-PTFE Bearings because of their unique design features can easily replace the traditional steel Bearings by using the following methodology :-

Removal of Steel Bearings -

1) The Bolts provided in the bottom and top plates of the Bearing for attachment to the structure are to be removed by unscrewing them.
2) The superstructure over the bearing is to be uplifted to a minimum of 5 mm using the hydraulic jacks installed by the side of the pedestal over the pier cap.
3) Extreme Top and Bottom components of the Bearings in contact with the Concrete Structure shall be made free from any sticktion with the concrete by Tapping or chiselling.
4) The Bearing as a whole or its components one by one shall then be carefully taken out from the structure by using proper pulling and lifting devices.
5) The Removed Bearing components shall then be shifted to safe and secured location and shall be handed over to the Engineer – in – Charge.
6) The Seating as well as the surrounding area of the Bearing shall then be cleaned of all dust and loose concrete etc.

Installation of New Slide Guide Type Pot – cum – PTFE Bearing -

1) While the Superstructure is rested on to the Temporary Bearings / Supports, the New Pot Bearings shall be affixed to the Superstructure through the existing Bolts projecting from it using epoxy / stiff cement paste at the interface for proper bonding and uniform seating.
2) Dowels to be embedded inside the Pedestal Concrete for anchoring the bearing with the substructure are affixed to the Bearing's bottom component using the Bolts and Washers.
3) Pier Cap Concrete area at the Location of the Proposed Pedestal shall be removed by Breaking / Chiselling to expose the Pier Cap Reinforcement.
4) The Exposed reinforcement shall be cleaned of all cement and concrete deposits using the Wire Brush.
5) Vertical Reinforcement to be provided in to the Proposed Pedestal shall be adequately tied / welded to the exposed Pier Cap Reinforcement to ensure proper transmission of the Loads and Forces.
6) Once the Stirrups and Mesh of the Pedestal Reinforcement is Placed in Position, the shuttering / formwork is placed surrounding the reinforcement as per the required Dimension.
7) The Superstructure having the Bearing and the Dowels affixed to its Bottom face is then lowered down in position allowing the dowels to sit inside the reinforcement cage of the Pedestal.

8) Once the line, level and alignment of the Bearing is checked. Concrete of the desired mix with suitable admixtures and bonding agents is poured inside the Pedestal formwork and is properly compacted.
9) The newly poured concrete is properly cured until it achieves the minimum desired strength and then the Temporary bearings used to support the superstructure during the Process are gradually removed and the Load is transferred on to the newly Installed Bearings.

Final Consideration –

1) Extreme care shall be taken during the process of replacement and removal of the Shuttering and temporary support to avoid damage to the Bearing components.
2) The Transportation Brackets shall be removed prior to loading the Bearings.
3) It must be fully ensured that the newly installed Bearings shall not be subjected to loading till the newly poured concrete achieves the required strength.
4) Attachment bolts should be torque to `snug tight' after the new Bearing has been installed.
5) The Surrounding area shall be finally cleaned of all deposits, cement slurry and construction tools and tackles etc.

– – – – – – – – – –

GUIDELINES FOR THE MAINTENANCE OF POT AND PIN BEARINGS

The Guidelines given in this section are for inspection and maintenance of POT, PTFE, PIN and Metallic Guide Bearings during service period. Bearings are designed and manufactured to make them virtually maintenance free so that the undesirable effects caused by extreme atmosphere or aggressive environmental condition / unforeseen events can be eliminated to a great extent. However, the surrounding area of the bearings shall always be kept clean and dry to avoid damage to the Bearings.

Provisions for suitable easy access to the bearing shall be made in the construction drawings for the purpose of inspection and maintenance. Provision shall be made for jacking up the superstructure so as to allow repair / replacement of the bearings, if required at any time in future.

Inspection of Bearing at site is required to be carried out from time to time to ascertain the performance of the Bearings. Periodic nominal maintenance of bearing shall be carried out in order to ensure better performance and longer life of the Bearings. The Bearings are generally required to be inspected at an interval of approx. one year for the first five years and at an interval of two years thereafter or as agreed between the client and the contractor. However, the bearings shall also be examined carefully after unusual occurrences, like heavy traffic, earthquakes, cyclones and battering from debris in high floods.

The inspection shall be preceded by careful cleaning of the Bearings as well as its surrounding space, depending on the actual conditions around the Bearings, e.g. deposit of salt, debris, dust or other foreign material.

Elements of Inspection

The following are recommended inspection elements and actions which are considered necessary to monitor and upkeep the bearings:

(1) **Measurement of Movement:** During inspection at site, measurements are required to be taken and documented to compute its movement and rotation values in relation to their design values to ascertain whether the performance of the bearings are satisfactory. To ascertain maximum movement, measurement should be taken once during peak winter (early morning) and once during peak summer (afternoon) and corresponding atmospheric temperature should be recorded. The recorded value of movement shall be compared with the design values.

(2) **Measurement of Dimensions:** Overall dimensions of the Bearings are required to be measured and compared with the actual dimensions to ascertain any excessive stress or strain on the Bearing.

(3) **Evidence of locked in Condition:** If any movable or rotating part of a Bearing is found to be in locked - in / jammed condition, necessary rectification measures shall be taken immediately.

(4) **Evidence of Corrosion:** If corrosion of any part of exterior exposed steel surface of the bearing is detected, the following measures may be taken. In addition, the root cause of defect should be searched and proper actions should be taken to avoid recurrence of the problem.

- Detect affect part.
- Wire brush the affected portion to clean of it's rust.
- Apply protective coating as per Manufacturer's Specifications.

(5) **Condition of the adjacent Bridge Structure:** The adjacent structure of the Bearings are also required to be inspected for any damage and necessary actions to repair the same, should be taken immediately.

Results and Actions

The results of every inspection has to be recorded in the inspection report and shall be deeply discussed with the project Consultants and the Bearing Manufacturer and classified in different categories depending upon the action required to be taken like:

(1) Re - inspection and / or monitoring is required

(2) Further measurements / long-term monitoring or design analysis needed (e.g. considering extreme temperatures / exposures, variation of loads, etc.).

(3) Minor repair works e.g. cleaning, repainting, etc.

(4) Repair or replacement of entire bearings or parts of the Bearings.

In case of defects where the cause of necessary actions cannot be determined by the inspecting person or the responsible Bridge Engineer, the bearing manufacturer shall be consulted.

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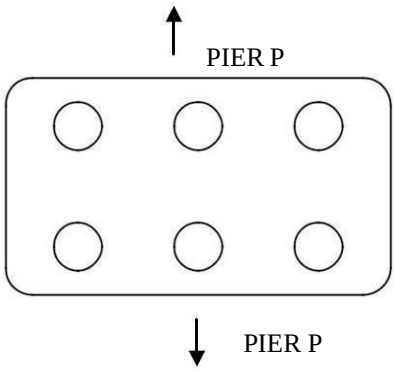
FORMAT FOR BEARING INSPECTION



BRIDGE NAME & LOCATION:

CONTRACTOR:

CLIENT:

DATE OF INSPECTION:

BEARING TYPE:

DATE OF INSTALLATION:

S.NO.	PARAMETERS	PIER NO.					
		BEARING. NO. 1	BEARING. NO. 2	BEARING. NO. 3	BEARING. NO. 4	BEARING. NO. 5	BEARING. NO. 6
1.	BEARING LAYING A. Level of Bearing Bottom Component B. Level of Bearing Top Component w.r.t. Bottom Component C. Grout/Bedding at Bottom & Top Component Interface. D. Deflection/Gap in between Pot & Piston E. Rotation/Inclination F. Lift off of Bearing Components						
2.	TRANSPORT BRACKETS: A. Transport Brackets on or taken off. B. Infringement with Bearing functioning.						
3.	BEARING ORIENTATION: A. Bearing Setting w.r.t. Movement Required B. Movement of Top Slide Plate C. Orientation of Top Component w.r.t Bottom Component D. Piston Orientation in case of Slide Guide Bearings.						
4.	ANOCHORAGE CONDITION: A. Bolts tightened properly. B. Bolts/Dowels Sitting straight/inclined C. Position/Condition of Elastomer/Steel Washers D. Grouting of Dowels						
5.	BEARING SURROUNDING/CLEANLINESS A. Cement/Slurry deposit on to the Brg. Components B. Cement/Slurry deposit on to the S/s Sheet C. Condition of Dust Seal D. Condition of Wiper Seal						

Other Comments/Observations:

Prepared by:

Name:

Checked by:

Name:

Signature

Signature:

INFRA PRESTRESS LLP

JOB

REFERENCE

LIST

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092

www.sconinfra.com info@sconinfra.com

OUR JOB REFERENCE FOR POT PTFE BEARING		
SR. NO	**Client**	**Project Name**
1	Force Construction Private Limited	Vakola Flyover Site
2	Singh Construction Company	Malda, West Bengal
3	M. Venkat Rao Infra Projects Pvt Ltd	NH-17 Patradevi to Karwada Goa
4	National Cancer Institute, Jamtha	Nagpur
5	Rajendra Singh Bhamboo India Pvt Ltd	NH-752 B, Biaora-Maksudangarh, M.p.
6	Sarthi Construction	Skew Canal Bridge, Calcutta
7	Dillip Buildcon Ltd	Zuari Bridge
8	Maruthi Infracreation Pvt Ltd	Nh-64 District- Anand, Gujarat.
9	Sanrachna Structural Strengthening Pvt Ltd	Ambet Bridge, Mahad
10	FRP Tech India Pvt Ltd	Vizag Bridge
11	BDS Projects India Pvt Limited	Athwa Gate Junction Flyover, Surat City
12	Mahendra Realtors & Infrastructure Pvt Ltd	Minor & Ambedkar Bridges, Surat
13	Bruecke & Gebaeude Engineers Pvt Ltd	Southern Viaduct of Bally Bridge, Kolkata
14	Force Construction Pvt Ltd	Nahur Project
15	J.M.Mhatre Infra Pvt.Ltd	Khapoli
16	M.Venkata Rao Infra Projects Pvt.Ltd	RTC-X Road, Hyderabad
17	Unique Construction	Chetla Lock Gate Bridge
18	Maruti Infracreation Pvt.Ltd	Spherical Bearings - (Jitodia-Gujarat Project)

MARUTI INFRACREATION PRIVATE LIMITED.

B-203, SHIVALIK BUSINESS CENTER
, OPP. KENSE VALLEY GOLF ACADEMY
AHMEDABAD INDIA
CIN : U45205GJ2015PTC085119
GSTIN : 24AAKCM0288R2ZS

PURCHASE ORDER

Business Unit : ANAND-ROB (015) : ASHOKVATIKA FARM HOUSE, : OPP.PATEL KAILASH DHAM, JITODIA-MOGRI ROAD, : JITODIA GST LOCATION - GUJARAT, GSTIN - 24AAKCM0288R2ZS

SCON INFRASTRUCTURE

Phone :
GST LOCATION - MAHARASHTRA,
GSTIN - 27ACIFS5757J1ZH

Order No. : RAPO/00246/21-22
Order Date : 28/09/2021
Quotation No. :
Quotation Date :
Kind Attention :
Ph.-

Billing Address:
1ST FLOOR, ROYAL HOUSE,
RADHANPUR ROAD, MEHSANA-384002, GUJARAT, INDIA

Delivery Address/Project Site :

ANAND-ROB (015)
ASHOKVATIKA FARM HOUSE,
OPP.PATEL KAILASH DHAM, JITODIA-MOGRI ROAD, JITODIA ANAND,
GUJARAT Pin-388345 INDIA
GST LOCATION - GUJARAT,
GSTIN - 24AAKCM0288R2ZS

Contact Person : BHAVIN SHAH
Contact No : 9925226012

Please supply the following Materials/items in accordance with your Quotation and subject to following terms and conditions.

#	Item	HSN	Description	Unit	Quantity	Rate	Amount	Indent No.	Dlv Dt.
1	-0794	73080000	BEARING - BRIDGE Spherical Free Float Bearing (RMD2 – RMD4) – Voided Slab SPHFF – SLS – 1686.32 KN, ULS – 2082.70 KN DISCOUNT@ 10.00% - 31110.400, IGST@ 18.00% - 50399.000	NOS	4.000				22-10-2021
2	-0794	73080000	BEARING - BRIDGE Spherical Slide Guide (L) Bearing (RMD2 – RMD4) – Voided Slab SG (L) – SLS – 1686.32 KN, ULS – 2082.70 KN DISCOUNT@ 10.00% - 20538.200, IGST@ 18.00% - 33272.000	NOS	2.000				22-10-2021
3	-0794	73080000	BEARING - BRIDGE Spherical Free Float Bearing (RMU5 – RMU1) – Voided Slab FF – SLS – 1829.37 KN, ULS – 2273.71 KN DISCOUNT@ 10.00% - 32015.600, IGST@ 18.00% - 51865.000	NOS	4.000				22-10-2021
4	-0794	73080000	BEARING - BRIDGE Spherical Slide Guide (L) Bearing (RMU5 – RMU1) – Voided Slab SG (L) – SLS – 1829.37 KN, ULS – 2273.71 KN DISCOUNT@ 10.00% - 21898.800, IGST@ 18.00% - 35476.000	NOS	2.000				22-10-2021

BASIC				
DISCOUNT				
IGST				

For, **MARUTI INFRACREATION PRIVATE LIMITED.**

"This is computer generated Purchase Order no signature required."

Authorised Signatory

THIS PURCHASE ORDER IS SUBJECT TO AHMEDABAD JURISDICTION ONLY.

FORCE CONSTRUCTION PVT LTD

Annexure - I

Site :- SCLR Phase 2

Sr No	Description	Capacity (mt)	Type	Unit	Qty	Accepted Rate	Amount
1	Free POT/ PTFE Bearing	1874	1	nos	12	[redacted]	[redacted]
2	Long. Guide POT/ PTEE Bearing	1412	2	nos	12		
3	Long. Guide POT/ PTEE Bearing	1244	3	nos	6		
4	Free POT/ PTFE Bearing	1874	4	nos	12		
5	Long. Guide POT/ PTEE Bearing	1412	5	nos	12		
6	Long. Guide POT/ PTEE Bearing	1244	6	nos	6		
7	Trans. Guide POT/ PTEE Bearing	3161	7	nos	12		
8	Fixed POT Bearing	2084	8	nos	12		
9	Fixed POT Bearing	2189	9	nos	6		
10	Free POT/ PTFE Bearing	3161	10	nos	12		
11	Long. Guide POT/ PTEE Bearing	2084	11	nos	12		
12	Long. Guide POT/ PTEE Bearing	2189	12	nos	6		
	Total -Rs						[redacted]

For M/s. RE INFRA PVT. LTD.

Authorised Signatory

Authorised Signatory

1402, Cypress, Chhagan Mahal CHS, Pestom Sagar, Road No. 4, Chembur (W), Mumbai - 400 071.
Email : forceconstructionpvtltd@gmail.com

Singh Construction Company
Engineers & Contractors

Ref No: SCC/ASM/SCON/20-21/351

Dated 2/Nov/2020

Purchase Order

SCON INFRASTRUCTURE

Office 17, GoraiMatruashish CHS. Ltd., Opp Azarabank, Gorai-II,Plot No Sc- 5, RSC-52
Borivali (W) 400092

GST No. :

Billing Address :
SINGH CONSTRUCTION COMPANY
407, PB COMPLEX, AT ROAD, GUWAHATI, Kamrup, Assam, 781001

GST No. : 18AEKPS7618J1ZT
Contact Person: Mr Deepak Sharma

Delivery Address :
SINGH CONSTRUCTION COMPANY
Prakash Complex,V & PO Gautam Basti,PS Khatkhati,Dist. Karbianglong. Assam
PIN. 782 480

GST No. : 18AEKPS7618J1ZT
Contact Number:9065184218/7667569869

PO No. # SCC/ASM/SCON/20-21/351
Dated 2/Nov/2020
Quotation # Ref: SCON/QUOTE/2020-21/18
Quotation Dt 2/Nov/2020

Payment Terms

Product ID/ Type of Bearing	Description	HSN Code	Qty	UM	Unit Price	Discount @ 0%	Taxable Amount	Applicable TAX	TAX Rate	Amount
FF- 987KN	Free Float bearing		24	Nos.	[redacted]	0.00	[redacted]	IGST @ 18%	[redacted]	[redacted]
PFX- (1497-259) KN	Pin Fixed Bearing		4	Nos.	[redacted]	0.00	[redacted]	IGST @ 18%	[redacted]	[redacted]
PMGI - 862 KN	Pin Metallic Guided (L) Bearing		4	Nos.	[redacted]	0.00	[redacted]	IGST @ 18%	[redacted]	[redacted]
								Total		[redacted]
								Packing & Forwarding		
								Round Off		0.2
								Net Amount		[redacted]

Amount in Words:- Rupees [redacted]

Terms & Conditions:-
POT PTFE Bearing for Minor bridge chainage124+938.
Taxes: IGST @ 18% Inclusive of above price
Freight: As Actual.
CERTIFICATE: you will provide Test Certificate.
Delivery: Within 5 to 6 Week from the date of receipt of approved Shop Drawings and technically and commercially clears order.
PAYMENT: 50% advance along with purchase order and balance against your Performa Invoce prior to dispatch.
You will submit the design & drawing within 3 to 4 days from the receipt of your confirmed PurchaseOrder.
The above offer is based on the loading details provided in the drawings, & other considerations are as under:-
- Bearings shall be Designed, Manufactured, Tested & Supplied as per IRC:83 (Part – III) specification.
- The above bearings are designed for the actual loading details provided in the drawings.
- Horizontal Load is considered as actual.10% Vertical Loa whichev is higer
- Concrete Grade is taken as M40 for Pedestal &M35 Superstructure.
- No Pedestal Restriction considered

For Singh Construction Co.
For Singh Construction Company

Authorised Signatory Auth. Signatory

Singh Construction Co.

M.VENKATA RAO INFRA PROJECTS PVT. LTD

Engineers & Contractors

PURCHASE ORDER

P.O.No.MVRIPPL/GOA-HO/PUR/ 504 /2019-20 **Date: 31/10/2019**

To
SCON Infrastructure,
Office 17, Gorai Matruashish CHS. Ltd.,
Opp Azara bank, Gorai-II,
Plot no. Sc-5, RSC – 52,
Borivalli (W) – 400092.

Kind Atten: Mr. Bhujbalrao (9324516701)

Sub: - Purchase Order for supply of POT-PTFE Bearings for our Construction of Four Laning of NH-17 from existing km 475.000 to 502.500 (Patradevi to Karaswada Section) in the state of Goa.

Dear Sir,

With reference to your Quotation No: SCON/QUOTE/2019-20/020-R1, dated: 23.10.2019 and subsequent discussions held with you, we are pleased to place the order for the following materials.

S.NO	Description	Capacity/MT	QTY	RATE	AMOUNT
A	**Major Bridge at CH. 481+028**				
1	Type B1 : S-Type Sliding POT-CUM-PTFE Bearing	120	24	[redacted]	[redacted]
2	Type B2 : ST-Type Guided Sliding Type POT-CUM PTFE Bearing	120	12	[redacted]	[redacted]
3	Type B1A : SL-Type Guided Sliding Type POT-CUM PTFE Bearing	120	8	[redacted]	[redacted]
4	Type B2A : F-Type Fixed POT Bearing	120	4	[redacted]	[redacted]
B	**VUP at CH.499+901**				-
1	Type B1 : S-Type Sliding POT-CUM PTFE Bearing	130	6	[redacted]	[redacted]
2	Type B2 : ST-Type Guided Sliding Type POT-CUM PTFE Bearing	130	6	[redacted]	[redacted]
3	Type B1A : SL-Type Guided Sliding Type POT-CUM PTFE Bearing	130	2	[redacted]	[redacted]
4	Type B2A : F-Type Fixed POT Bearing	130	2	[redacted]	[redacted]
C	**Colvale Bridge at CH.496+425**				-
1	Type B1 : S-Type Sliding POT-CUM PTFE Bearing	135	2	[redacted]	[redacted]
2	Type B2 : SL-Type Guided Sliding Type POT-CUM PTFE Bearing	135	2	[redacted]	[redacted]
3	Type B3 : ST-Type Guided Sliding Type POT-CUM PTFE Bearing	315	2	[redacted]	[redacted]
4	Type B4 : F-Type Fixed POT Bearing	315	2	[redacted]	[redacted]

M.N Ramana

Visakhapatnam : 48-19-6,2nd Floor, M.V.R Complex, Opp.: R.T.C Complex,Vishakapattnam-530 016,Tel: 0891-5566612,Fax:08915562322
Goa : H/No.15/153/A-2,I Floor,Above Audi Goa Showroom,Opp.Harley Davidson Showroom Caranzalem,Miramar , Goa-403002
Mumbai : Silver Strip Bldg.No.:2, Flat No.:A4,Vakola Pipe Line Road, Santa Cruz east, Mumbai- 400 055 Tel: 022-26682884 fax:022-26689117
Hyderabad : H No.8-2-293/82/J-111/436, Near Apollo Pharmacy, Road No. 80, 3rd Phase, Jubilee Hills, Hyderabad, Telangana-500033
Delhi : C-2D/50A, Janakpuri, New Delhi-110058 Tel: 011-55785368, Fax: 011 25573952

M.VENKATA RAO INFRA PROJECTS PVT. LTD

Engineers & Contractors

5	Type B5 : S-Type Sliding POT-CUM PTFE Bearing	200	6	[redacted]	[redacted]
6	Type B6 : SL-Type Guided Sliding Type POT-CUM PTFE Bearing	200	6	[redacted]	[redacted]
7	Type B7 : ST-Type Guided Sliding Type POT-CUM PTFE Bearing	340	2	[redacted]	[redacted]
8	Type B8 : F-Type Fixed POT Bearing	340	2	[redacted]	[redacted]
9	Type B9 : ST-Type Guided Sliding Type POT-CUM PTFE Bearing	110	2	[redacted]	[redacted]
10	Type B10 : F-Type Fixed POT Bearing	110	2	[redacted]	[redacted]
11	Type B11 : S-Type Sliding POT-CUM PTFE Bearing	110	2	[redacted]	[redacted]
12	Type B12 : SL-Type Guided Sliding Type POT-CUM PTFE Bearing	110	2	[redacted]	[redacted]
		Total	**96**	[redacted]	
		GST 18%		[redacted]	
		Grand Total		[redacted]	

Terms and conditions:-

1. Transport : Extra at actual from Mumbai to Goa in our account.
2. Taxes : IGST 18% extra as indicated above.
3. Payment : [redacted]
4. Delivery Period : Bearings to be delivered within 4 weeks from the date of approval of drawings.
5. Delivery Address : M.Venkata Rao Infra Projects Pvt.Ltd, Base Camp, Near Central Jail, Colvale, Karaswada, Mapusa, Goa. Contact Person Mr. Kumar. 9583533378.
6. Billing Address : M.Venkata Rao Infra Projects Pvt Ltd. H/No.15/153/A-2, 3rd Floor, Above Audi Goa Showroom, Caranzalem, Miramar , Goa-403002.
7. GST NO : Our GST No is 30AAECM6274B1ZX.
8. Test Certificates : Manufacturing test certificates should be submitted along with invoice copy at the time of dispatch.
9. Performance Guarantee : You have to provide performance guarantee as per MORTH.
10. Inspection : For 3rd party inspection you will inform one week before form the date of inspection and routine tests shall be carried out as per IS standards at the time of Inspection. Up and down travelling charges upto Mumbai in our account. Local Conveyance from Mumbai to your factory Up and down including Lodging and Boarding in your account.
11. Approval : Submit the drawings along with technical specifications within 4 days from the date of Purchase Order for Client/Consultant approval. Order finalization subject to approval.

M. Venkata Rao Infra Projects Pvt. Ltd.

M. V Ramana

Visakhapatnam : 48-19-6,2nd Floor, M.V.R Complex, Opp.: R.T.C Complex,Vishakapattnam-530 016,Tel: 0891-5566612,Fax:08915562322
Goa : H/No.15/153/A-2,I Floor,Above Audi Goa Showroom,Opp.Harley Davidson Showroom Caranzalem,Miramar, Goa-403002
Mumbai : Silver Strip Bldg.No.:2, Flat No.:A4,Vakola Pipe Line Road, Santa Cruz east, Mumbai- 400 055 Tel: 022-26682884 fax:022-26689117
Hyderabad : H No.8-2-293/82/J-111/436, Near Apollo Pharmacy, Road No. 80, 3rd Phase, Jubilee Hills, Hyderabad, Telangana-500033
Delhi : C-2D/50A, Janakpuri, New Delhi-110058 Tel: 011-55785368, Fax: 011 25573952

12.Packing & Forwarding : Bearings must be properly packed in Wooden boxes, if any damage during the transportation, then it must be rectified from your end.

13. Quality : The above Bearings are to be supplied as per IS standards and specifications, otherwise the same will be rejected at your own risk and cost.

This Purchase Order is subject to jurisdiction of the courts in Panaji, Goa.

Please sign the duplicate as token of acceptance.

Thanking you,

Yours Faithfully,
For M VENKATA RAO INFRA PROJECTS PVT LTD.

M.N Rao

(G G NAIDU)

M Venkata Rao Infra Projects Pvt. Ltd.

BRUECKE GEBAEUDE ENGINEERS PVT. LTD.

Ref. No. BGEPL/2021-22/PO/01

Date: April 03, 2021

To,

SCON INFRASTRUCTURE

109-111, 1st Floor, R Plazzia, Swastik Regalia Tower,

Near G. P. Parsik Janta Sahakari Bank, Waghbil Road,

Kavesar, Off. Ghodbunder Road,

Thane West -400607

Tel.: 022-25970004

Kind Attn: Mr. Bhujbalrao. U.H / Mr. Vaibhav Parab (Managing Partner)

Name of Project: **Repairs & Rehabilitation of Southern Viaduct of Bally Bridge in Kolkata**

Sr No.	Description	UOM	Qty.	Rate	Amount (Rs)
1	Supply of Elastomeric Bearings as per latest MORTH/IRC Specifications. Size: 600x400x90 - 78 Nos	CuCm	1684800		
Taxes Extra@18%					
Grand Total (Rounded Off)					

Terms & Conditions.

1.
2.
3. E-Way Bill is Compulsory with the Invoice
4. Material Test Certificate shall be submitted with the joints.
5. Transportation Will Be Extra at actual

For Bruecke and Gebaeude Engineers Pvt. Ltd.

SCON INFRASTRUCTURE SCON

Authorised Signatory

FRP Tech (India) Pvt. Ltd.
Provider of the Tyfo® Fibrwrap® Systems
(Formerly Fyfe (India) Pvt. Ltd.)

W.O No.- FRP/SI/20-21/005 Date: 15th January 2021

WORK ORDER

To,

SCON INFRASTRUCTURE
109-111, 1st Floor, R Plazzia, Swastik Regalia Tower,
Near G. P. Parsik Janta Sahakari Bank, Waghbil Road,
Kavesar, Off. Ghodbunder Road,
Thane West -400607
Tel.: 022-25970004

Kind Attn: Mr. Bhujbalrao. U.H/ Mr. Vaibhav Parab (Managing Partner)

Name of work: Structural Rehabilitation of Flyover RAMP-A on Port Road, Visakhapatnam by using specialized techniques in the state Andhra Pradesh.

Sr. No.	Particular	UOM	Qty.	Rate	Amount (in Rupees)
1	Lifting Of Span , Realigning the disturbed spans i.e super structure of Bridge for replacement of bearings and including all higher and running expenses of all plants, Hydraulic jacks, Power Packs, Generator Set, Welding Machines and Equipment, temporary platform and temporary supports, required for keeping the superstructure in lifted position for completing the operation. Lowering of superstructure on new Elastomeric Bearings without causing any detrimental effect to any part of the bridge structure complete. Surface preparation i.e. leveling of top surface of pedestal and carrying out minor repairs works so as to carry out proper installation of new Elastomeric Bearings for equal distribution of load. Labour Charge for replacement of Elastomeric as per approved size by client. **Rates are inclusive of GST / IGST**	Cu.CM	As per approved Size		
2	Supply of Elastomeric Bearing as per the site instruction or as per approved technical specifications as per item no. (II), (iii). Each Bearing: 10,800 Cub.cm Total Bearings as per BOQ- 1000 Nos. **Rates are inclusive of GST / IGST**	Cu.CM	As per approved Size		
TOTAL					

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Your Scope of Work.

- Supply of Material as per approved drawing and necessary approvals required
- Replacement of old elastomeric bearings with new elastomeric bearings once we give traffic closure.
- Supplying and Installing Barricades, warning sign boards, dummy flagman, Safety Marshals and any safety precautions materials for safety purpose to closure the bridge as per required situation at site.
- After removal of old elastomeric bearings & same will be handed over to us.
- Machinery required for replacement from old to new elastomeric bearings.
- All worker should work with proper and complete safety equipment as required at site.
- Supply of water, Electricity etc.

Our scope of work.

- Traffic permission for Bridge closure partly (Half Carriageway) from Police & collector.

Terms & Conditions

1. Installation: You are advised to mobilize the site immediately.
2. During the replacement of Bearings, if any structural cracks or defects arises to girder, your organization will be responsible for the rectification of the same at your cost.
3. 10 Years should be your minimum guarantee for newly installed bearings as per MORTH format.

5. **Payment Terms: As per discussed and mutually agreed, the payment will be released in 2 part which is mentioned as below:**

PART A: (will be done in 2 Phases)

a) Advance: _____

b) Balance _____

PART B : (will be done in 2 Phases)

First Phase

a) After completion of 10% of Phase-I at site, Lakhs shall be released on installation cost.

b) will be paid after the completion and after 35 days when we have raised and get paid bills from department or client.

Second Phase

a) After completion of 10% of Phase-II at site, Lakhs shall be released on installation cost.

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6. All working labours should have ESIC and PF accounts or any others for employees or labours and insurance documents for both which may have to be submitted if required by client. Any deduction regarding this matter will be deduct from your Bill.

We acknowledge and accept the above terms and conditions.

For **FRP TECH INDIA PVT LTD.**

for **Vineet Jain**
Director

For SCON INFRASTRUCTURE

15/01/2021

Bhujbalrao U.H.
Managing Partner

SCON INFRASTRUCTURE
SCON

INFRA PRESTRESS LLP

OUR PRESTIGEOUS PROJECTS

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

Regdoff :Office 17, Gorai Matruashish CHS. Ltd., OppAzarabank,Gorai-II, plot no. Sc-5,RSC - 52, Borivali (W) – 400092
www.sconinfra.com info@sconinfra.com

SCON
INFRA PRESTRESS LLP

ZUARI CABLE STAY BRIDGE - (LEAD BEARINGS)

P.T. Slab, Rock Anchoring, Rehabilitation, Expansion joints, Stay Cable, Bridge Bearings

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