



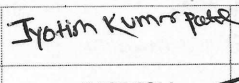
Bharat Heavy Electricals Ltd
Boiler Auxiliaries Plant Ranipet-632 406

FLUE GAS DESULPHURISATION DEPT
TECHNICAL SPECIFICATION

SPECIFICATION NO: FGD:REJ:R00

REV NO:00

PAGE NO 01 OF 03

00	12/03/2020	Fresh Release	 Anupam Kushwaha	 JYOTISH KUMAR PATEL	 V. Kesavan
REV	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

Slno	Item	Rubber Expansion Joints.					Vendor Acceptance/Comments
1	Scope of supply	(1) Rubber Expansion Joint along with metal Flanges as per Annexure-1. (2) Control Plates (shall be welded with Flanges) as per Annexure-1. (3) Control Rods with Nuts & Washers as per Annexure-1.					
2	Type	Arch Type Expansion joint.					
3	Sizes	350 NB	300 NB	200 NB	150 NB	100 NB	
4	Application	Gypsum Slurry	Gypsum Slurry	Gypsum Slurry	Air/Water	Water	
5	Flange	All holes and dimensions shall be as per ANSI 16.5B Class 150					
6	Connection Type (Both ends flanges will be in single piece. Split type not acceptable)	Minimum One side flange will be loose/slip on					
7	Galvanizing (50μ min.)	Flange, Control Plates, Control Rods, Nuts & Washers all shall be galvanized- 50μ min.					
8	Sample requirement	During enquiry stage, 1 numbers of typical sample expansion joint to be sent to BHEL for review					
9	Inspection at vendor works	a) Inspection by BHEL or its authorized agency b) Material Test Certificates shall be submitted during inspection.					
10	Document	(a) The Vendor shall furnish point wise reply and submit seal & signed copy of this specification (b) The Vendor shall submit the dimensional drawings / catalogues indicating materials of construction and weight along with the offer for information. (c) Vendor to provided Quality plan with the offer.					
11	Packing	Items shall be wrapped in a polythene hessian and the package shall be kept in a carton box prior to dispatch. Vendor to specify during enquiry.					
12	Outside the box	PO number, vendor name, item size, material code, model number, Quantity inside the box to be mentioned.					
13	Drawing	A typical drawing is attached for reference.					

Design Data:-

SIZE (NB)		350 NB	300 NB	200 NB	150 NB	100 NB
DESIGN PRESSURE		8 kg/cm ²	8 kg/cm ²	8 kg/cm ²	8 kg/cm ²	8 kg/cm ²
HYDRO TEST PRESSURE		12 kg/cm ²	12 kg/cm ²	12 kg/cm ²	12 kg/cm ²	12 kg/cm ²
DESIGN TEMP.		110 deg.C	110 deg.C	110 deg.C	110 deg.C	110 deg.C
AXIAL MOVEMENT	COMPRESSION	30 mm	30 mm	30 mm	19 mm	19 mm
	EXTENSION	17 mm	17 mm	17 mm	11 mm	11 mm
LATERAL MOVEMENT		19 mm	19 mm	16 mm	16 mm	16 mm
OVERALL LENGTH		200 mm	200 mm	150 mm	150 mm	150 mm

FLANGE DETAILS:-

DESCRIPTION (mm)	350 NB	300 NB	200 NB	150 NB	100 NB
O.D. (mm)	534	483	343	279	229
PCD (mm)	476.2	431.8	298.5	241.3	190.5
HOLE DIA (mm)	28.4	25.4	22.2	22.2	19.1
NO. OF HOLE	12	12	8	8	8
THICKNESS as per ANSI B16.5 (mm)	35	31.8	28.6	25	23.8
TIE ROD LENGTH (mm)	380±5	380±5	330±5	300±5	300±5
TIE ROD THK (φ) (mm)	φ24	φ24	φ16	φ16	φ16

MATERIALS:-

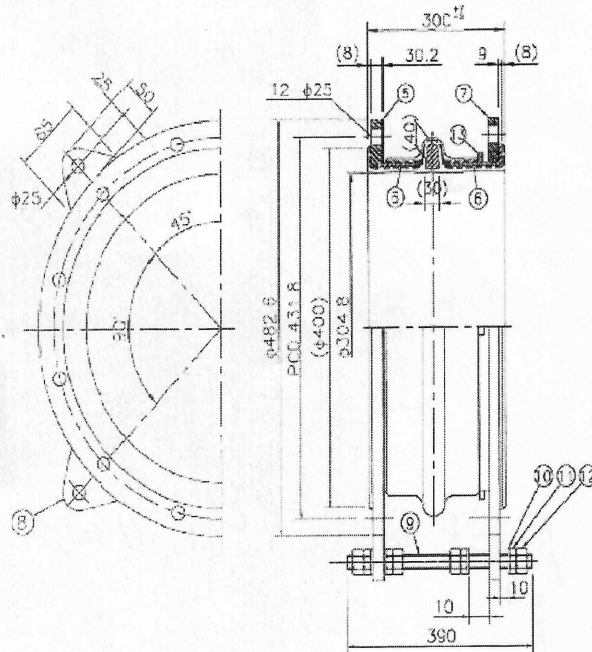
Fixed Flange	IS 2062+CR
Loose Flange	IS 2062+CR
Rubber Outer Cover	EPDM
Reinforcing Fabric	Chemical fibre
Reinforcing Cord	Chemical fibre
Rubber Inner Tube	Chloroprene Rubber
Control Ring/Plate (Control plates will be welded on the flanges. Bolted not acceptable)	IS 2062 Gr. A
Tie Rod/control bolt, Nut, locknut & Washer	IS:1367 CL 8.8 With 50 μ Galvanised

Note: CR- Chloroprene rubber

Remarks: - One set of Expansion joint consists following items explained in table-

Items	350 NB/300 NB	200NB/150NB/100NB	Vendor Acceptance/Comments
Bellow	1 no.	1 no.	
Flanges	2 nos.	2 nos.	
Control plates	8 nos.	4 nos.	
Control bolts	4 nos.	2 nos.	
Nut	16 nos.	8 nos.	
Lock Nut	16 nos.	8 nos.	
Washer	16 nos.	8 nos.	

TYPICAL DRAWING OF RUBBER EXPANSION JOINT



PAINLINE

Surface Preparation : Sa 2.5

Under Cooling : Inorganic Zinc Primer

75¢ m/one cool

Second Coating High build polyamine adduct
cured epoxy top coat

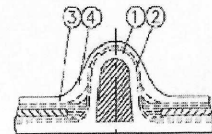
3500 / one cool.

Finish Coating : High build polyamine adduct
cured epoxy top coat

125 m/two coat

Total minimum 360mm

CAREER		
MARK	DATE	EXPLANATION



DETAIL OF CONSTRUCTION

13	STOPPER			
12	NUT	4x4		M22
11	LOCK NL	4x4		M22
10	WASHER	4x4		M22
9	CONTRCL BOLT	4		M22
8	CONTRCL PLATE	4x2		
7	LOOSE FLANGE	1		ANSI 150Lb 12"
6	NIPPLE	2		
5	FLANGE	1		ANSI 150Lb 12"
4	RUBBER OUTER COVER	1	EPDM	2.5 mm
3	REINFORCING FABRIC	1	CHEMICAL FIBER	1 P
2	REINFORCING CORD	1	CHEMICAL FIBER	4 CP
1	RUBBER INNER TUBE	1	CR	6 mm
PART NO.	NAME OF PART	NO REQ'D	MATERIAL	REMARKS

TITLE		RUBBER EXPANSION JOINT 12" x 1/4CH x 300L	
USER			DR'D BY.
DATE	SCALE		CHK'D BY.
DWG No.			APPROVED BY.