



**Bharat Heavy Electricals Limited  
(A Govt. of India Undertaking)**

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REF: ENQ NO:1102

DT: 24.05.2011

Sub: Rate contract for Fabrication of pipe with attachments to P91 specification.

**Ref: Enquiry No:RC1102 dt 12.05.2011**

Please find the following tender documents for reference.

1. List of items
2. Drawings for pipe with attachments
3. Edge preparation drawing.
4. Quality Plan QPG:73:03.

Pre qualification is the criteria for consideration for other than BHEL approved vendors. After qualifying for registration against this category, the new vendors may be considered for future requirements, in line with BHEL system and policy. Such vendors will not be considered for this enquiry.

**This is a limited tender and only vendors who are contacted through e-mail/courier may submit their offers.**

New vendors may download vendor registration forms from BHEL web site [www.bhel.com](http://www.bhel.com) and relevant data for formal registration.

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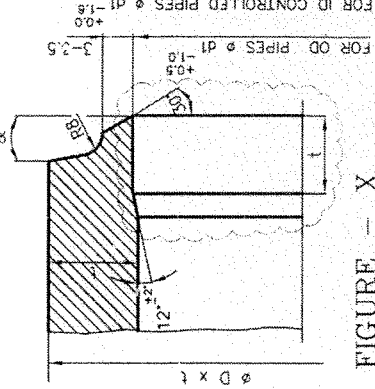
| ENQ NO : RC 1102 PIPE WITH ATTACHMENTS:2011-12 DT 12-05-11<br>ANNEXURE C- LIST OF ITEMS AND PRICE FORMAT<br>List of items and Price Format: Rates to be quoted per Piece as per Type Drawing, Finished with EP as per EP Drawing in Rupees including Transportation to Site<br>(FOR Site)   |  |             |                |                 |                    |                                 |   |                         |  |
|---|--|-------------|----------------|-----------------|--------------------|---------------------------------|---|-------------------------|--|
| Material Group SA 335 P91- Attachments Gr 91, F91   |  |             |                |                 |                    |                                 |   |                         |  |
| Sl.No   | Type   | Drawing No. | Dia in mm      | Thickness range | Tentative Qty Nos. | FOR-Site/Trichy per Piece in Rs | Taxes applicable* @ ... % including service Tax if any Amount in Rs | Total Price/Piece in Rs |  |
| 1   | Straight Pipe with trunion and stubs           | Pipe 002    | 219.1 to 406.4 | 20 to 55        | 30                 |                                 |   |                         |  |
| 2   | Straight Pipe with trunion and stubs           | Pipe 002    | 457 to 610     | 20 to 70        | 10                 |                                 |   |                         |  |
| 3   | Straight Pipe with trunion and stubs           | Pipe 002    | 660 to 965     | 20 to 70        | 25                 |                                 |   |                         |  |
| 4   | Straight Pipe with carrier plates and stubs    | Pipe 003    | 219.1 to 406.4 | 20 to 55        | 75                 |                                 |   |                         |  |
| 5   | Straight Pipe with carrier plates and stubs    | Pipe 003    | 457 to 610     | 20 to 70        | 20                 |                                 |   |                         |  |
| 6   | Straight Pipe with carrier plates and stubs    | Pipe 003    | 660 to 965     | 20 to 70        | 25                 |                                 |   |                         |  |
| 7   | Straight Pipe with trunion                     | Pipe 004    | 219.1 to 406.4 | 20 to 55        | 70                 |                                 |   |                         |  |
| 8   | Straight Pipe with trunion                     | Pipe 004    | 457 to 610     | 20 to 70        | 70                 |                                 |   |                         |  |
| 9   | Straight Pipe with trunion                     | Pipe 004    | 660 to 965     | 20 to 70        | 80                 |                                 |   |                         |  |
| 10  | Straight Pipe with carrier plates              | Pipe 005    | 219.1 to 406.4 | 20 to 55        | 84                 |                                 |   |                         |  |
| 11  | Straight Pipe with carrier plates              | Pipe 005    | 457 to 610     | 20 to 70        | 113                |                                 |   |                         |  |
| 12  | Straight Pipe with carrier plates              | Pipe 005    | 660 to 965     | 20 to 70        | 63                 |                                 |   |                         |  |
| 13  | Straight Pipe with stubs                       | Pipe 006    | 219.1 to 406.4 | 20 to 55        | 281                |                                 |   |                         |  |
| 14  | Straight Pipe with stubs                       | Pipe 006    | 457 to 610     | 20 to 70        | 151                |                                 |   |                         |  |
| 15  | Straight Pipe with stubs                       | Pipe 006    | 660 to 965     | 20 to 70        | 208                |                                 |   |                         |  |
| 16  | Edge preparation of Straight Pipe ( off cuts ) |             | 219.1 to 406.4 | 20 to 55        | 100                |                                 |   |                         |  |
| 17  | Edge preparation of Straight Pipe ( off cuts ) |             | 457 to 610     | 20 to 70        | 50                 |                                 |   |                         |  |
| 18  | Edge preparation of Straight Pipe ( off cuts ) |             | 660 to 965     | 20 to 70        | 75                 |                                 |   |                         |  |
|   |  |             |                |                 | 1530               |                                 |   |                         |  |
| * For despatches to site ED gate pass will be provided by BHEL  |  |             |                |                 |                    |                                 |   |                         |  |
| Tentative Project Sites:<br>ADHUNIK POWER, ANPARA, AVANTHA BHANDAR, BOKARO-A, GVK GOVINDWAL, HINDALCO MAHAN, HINDALCO ADITYA, IEPL-BELA, JINDAL DERANG, JINDAL RAIGARH, SATPURA, SHREE SINGAJI, TRIPURA, TUTICORINE, AMARAVATHI, CHHABRA, CHANDWA, KORBA WEST, MARWA, NASIK, SIKKA, BINA, CHANDRAPUR, GVK POWER, KRISHNAPATNAM, NORTH CHENNAI, PARLI, VALLUR. |  |             |                |                 |                    |                                 |   |                         |  |

3-80-300-19825

DRAWING No.

**NOTES: -**

- 01. APPLICABLE FOR P91 MATERIAL
- 02. FOR OD MISMATCHING REF. FIGURE-Xa.
- 03.  $\alpha = 6^\circ$  FOR WALL THICKNESS  $\leq 30$  mm
- 04.  $\alpha = 10^\circ$  FOR WALL THICKNESS  $> 30$  mm

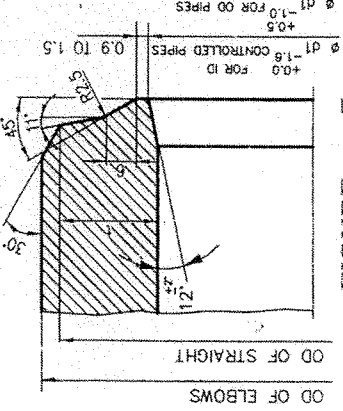


**FIGURE - X**

**MATCHING EDGE PREPARATION FOR MISMATCH OD**  
 DIAMETRICALLY GREATER THAN 8 mm  
 (ie. OD1 - OD2 > 8mm.) APPLICABLE FOR  
 ELBOWS OTHER THAN P91 MATERIALS

**NOTES: -**

- 01. OD = OUTSIDE DIA OF CONNECTING PIPE (STRAIGHT) TO BE PHYSICALLY MEASURED/VERIFIED.
- 02. t = THK OF CONN. PIPE (STRAIGHT)

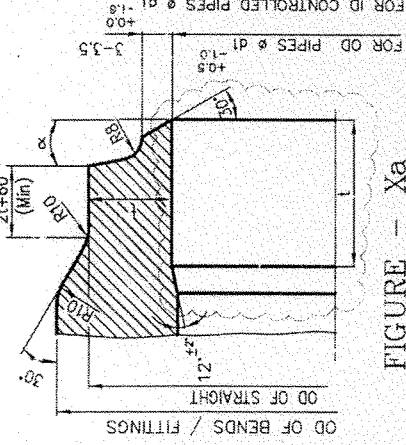


**FIGURE - Z**

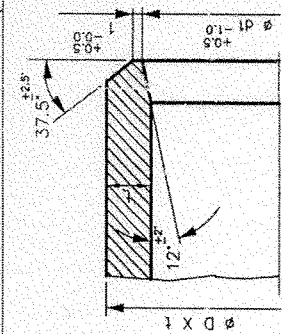
**MATCHING EDGE PREPARATION FOR MISMATCH OD**  
 DIAMETRICALLY GREATER THAN 8 mm  
 (ie. OD1 - OD2 > 8mm.) APPLICABLE FOR  
 BENDS/FITTINGS OF P91 MATERIALS

**NOTES: -**

- 01. OD OF STRAIGHT TO BE PHYSICALLY MEASURED/VERIFIED.
- 02.  $\alpha = 6^\circ$  FOR WALL THICKNESS  $\leq 30$  mm
- 03.  $\alpha = 10^\circ$  FOR WALL THICKNESS  $> 30$  mm



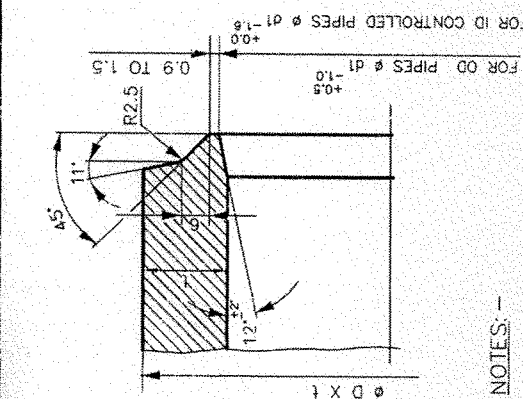
**FIGURE - Xa**



**STYLE - D**

**NOTES: -**

- 01. USE WHEN  $t < 14.2$  mm.



**STYLE - P**

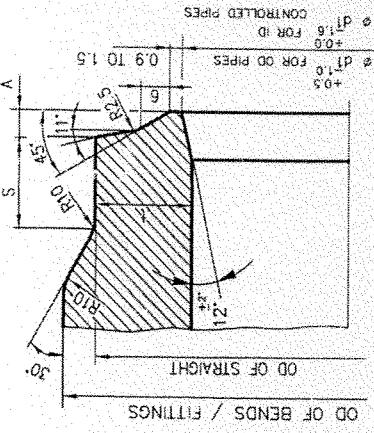
**NOTES: -**

- 01. USE WHEN  $t \geq 14.2$  mm.
- 02. FOR OD MISMATCHING REF. FIGURE-Pa

**MATCHING EDGE PREPARATION FOR MISMATCH OD**  
 DIAMETRICALLY GREATER THAN 8 mm  
 (ie. OD1 - OD2 > 8mm.) APPLICABLE FOR  
 BENDS/FITTINGS OTHER THAN P91 MATERIALS

**NOTES: -**

- 01. OD OF STRAIGHT TO BE PHYSICALLY MEASURED/VERIFIED.
- 02. WHEN  $t < 65$ ,  $S+A = 65$  Min. &  $t > 65$ ,  $S=65$  Min. WHERE t=THK OF CONN. PIPE (STRAIGHT).



**STYLE - Pa**

**GENERAL NOTES:**

- 01. THE MINIMUM THICKNESS AT WELD END SHALL NOT BE LESS THAN
  - a) 0.875 TIMES t NOM. FOR OD PIPES.
  - b) t MIN. FOR ID CONTROLLED PIPES.
- 02. t NOM & t MIN SHALL BE AS PER SPECIFIED PIPE SIZE.

**NOTES FOR WELDING:**

- 01. WELD REINFORCEMENT TO BE FLUSH GROUND AND MERGED WITH PARENT METAL WITHOUT ANY UNEVENNESS.

FIRST ANGLE PROJECTION (ALL DIMENSIONS IN MILLIMETRES)

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

**STANDARD**

|  |                      |          |                               |              |          |          |             |
|--|----------------------|----------|-------------------------------|--------------|----------|----------|-------------|
| DEPT.  | GRADE OF UR TOL. DIM | SCALE    | WEIGHT (Kg.)                  | NAME         | SIGN     | DATE     | NO OF ITEMS |
| 01   | C/M/F                | 1:1      |                               | K.BRAGUNATH  |          | 11.10.01 | 01          |
| DATE   | APPROVED             | APPROVED | APPROVED                      | DRN          | CHKD     | APPD     | ITEM No.    |
| 11-05-06   | R. Sankar            | A. V. V. |                               | M.C. SEKARAN | M. V. S. |          |             |
| PROJECT NAME REMOVE AND STANDARD INCORPORATED IN TITLE BLOCK |                      |          | NAME OF ORIGINAL ORGANIZATION |              |          |          |             |
|  |                      |          | DRAWING No.                   |              |          |          |             |
|  |                      |          | U 01 3-80-300-19825 01        |              |          |          |             |
|  |                      |          | REV                           |              |          |          |             |
|  |                      |          | 01                            |              |          |          |             |