



CORPORATE STANDARD

AA 732 61 02

Rev. No. 01

PAGE 1 OF 4

TEMPERATURE STUB, SCREWED TYPE, FOR MEDIUM PRESSURE (UP TO 250 Kg/cm²)

1.0 SCOPE:

- 1.1 This standard specifies the requirements of temperature stubs for nominal pressure up to 250 Kg/cm², for slant immersion for main pipe O.D's 88.9 to 159 mm and for straight immersion for main pipe O.D's of 168.3 mm and above with carbon steel and alloy steel materials.
- 1.2 These stubs are used for insertion of thermowells of temperature measuring instrument for media demineralised water, oil, fuel gas etc.

2.0 DESIGNATION:

A temperature stub for straight immersion carbon steel material length 45 mm pressure 250 kg/cm² to this standard shall be designated as follows.

2.1 On Drawings and Indents :

Material specification column : AA 732 61 02

Description column : TEMP. STUB STRT IMRTN CS L45

Material code column : AA 732 61 02 341

2.2 On Enquiries and Purchase orders:

In addition to incorporating the above details, a copy of this standard shall be enclosed.

3.0 TECHNICAL REQUIREMENTS:

- 3.1 **Materials:** The stubs shall be manufactured from forged materials as given below:

<u>Material</u>	<u>Service temp.</u>	<u>Specification</u>
Carbon steel	0 – 427° C	ASTM A 105
Alloy steel	427 – 538° C	ASTM A 182 F 11
	427 – 593° C	ASTM A 182 F 22

- 3.2 The dimensions of temperature stub for slant immersion are given in table 1. These stubs are used for main pipe O.D's of 88.9 to 159 mm.

- 3.3 The dimensions of temperature stub for straight immersion are give in table 2. These stubs are used for the main pipe O.D's of 168.3 mm and above.

- 3.4 For installation of thermowells in pipe O.D's 88.9 mm below, larger pipe section of O.D 88.9 mm should be used. The mounting details are as given in Annexure 1.

- 3.5 The treading connection of the stub is M33 x 2.

Revisions :

Cl. 18.6.10 of MOM of WG-M&CD

APPROVED :

INTERPLANT
STANDARDIZATION COMMITTEE- (WG-M&CD)

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4.0 TEST CERTIFICATES:

Three copies of the material test certificates counter-signed by an authority recognized by IBR are to be supplied.

5.0 MARKING

The following details shall be marked on each stub:

- Manufacturer's name or trade mark.
- Material specification
- Thread size

6.0 PACKING

Each stub shall be applied with suitable rust preventive coating and suitably packed in batches of ten numbers each and supplied with plastic end caps.

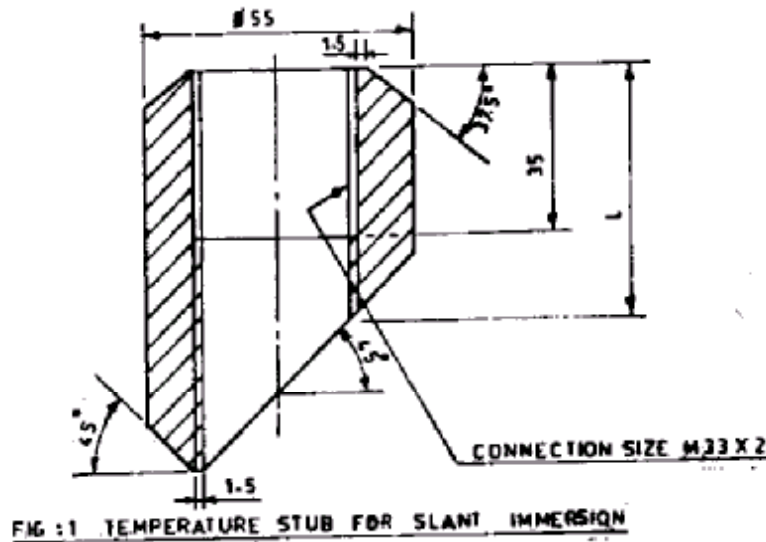


TABLE 1. TEMPERATURE STUB FOR SLANT IMMERSION

O.D. of Main pipe (mm)	Thermowell insertion Length (L1)	Length of The stub (1)	Material	Sub Code
88.9 mm to 159 mm	150	64	ASTM A 105	015
			ASTM A 182 F 11	023
			ASTM A 182 F 22	031

NOTE: 1) These stubs are used for O.D's of main pipe 88.9 to 159 mm.

2) In case a suitable pipe bend is available, a straight stub can be used instead of slant stub to this standard.



CORPORATE STANDARD

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Rev. No. 01

PAGE 3 OF 4

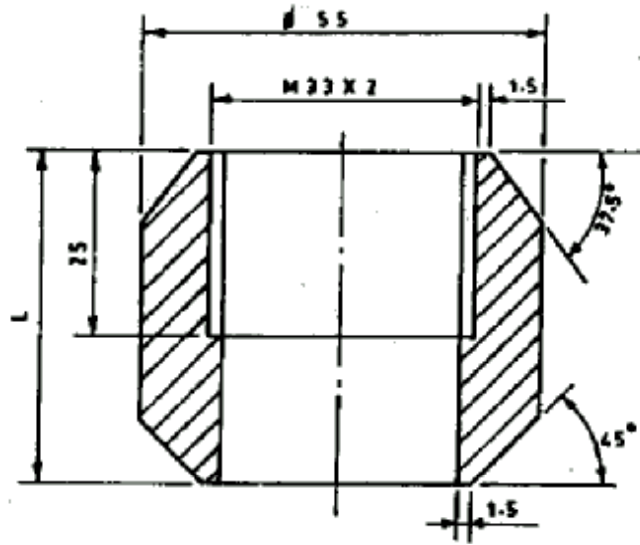


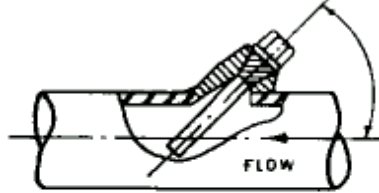
TABLE – 2 : TEMPERATURE STUB FOR STRAIGHT IMMERSION

O.D. of Main pipe (mm)	Thermowell insertion Length (L1)	Length of The stub (L)	Material	Sub Code
168.3	150	64	ASTM A 105	317
			ASTM A182 F11	325
			ASTM A182 F22	333
193.7	150	64	ASTM A105	317
			ASTM A182 F11	325
			ASTM A182 F22	333
219.1	150	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
273.0	150	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
323.9	175	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
355.6	175	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
406.4	250	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
508.0	250	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368
Above 508.0	325	45	ASTM A105	341
			ASTM A182 F11	350*
			ASTM A182 F22	368

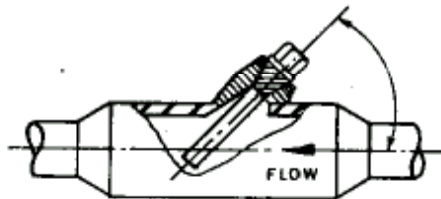


- NOTE:** 1) These stubs are used for O.D of main pipe having 168.3 mm and above.
2) For 12 digit material code suffix sub code to the standard number
3) Specific requirements of the plant shall be covered by plant annexure to this standard.

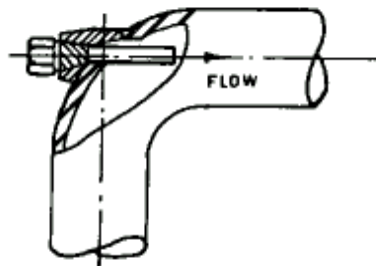
THERMOWELL INSTALLATION (ANNEXURE)



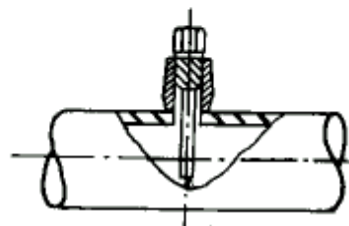
INSTALLATION TYPE-1
FOR MAIN PIPE OD'S 88.9mm to 159mm



INSTALLATION TYPE-2
FOR MAIN PIPE OD'S 88.9mm BELOW



INSTALLATION TYPE-3
FOR MAIN PIPE OD'S 88.9mm BELOW



INSTALLATION TYPE-4
MAIN PIPE OD 168.3 mm & ABOVE