NEWS LETTER-27

Significance Of Pipe Size Part-II

In continuation to the explanation on client input technical data, the next item to be discussed.

1. Design/operating temperature

Client selects proper material specification to suit the required temperature of the fluid being handled & its nature (corrosive / fluid type etc) Normally client insists on clamp material same as that of parent Pipe / trunnion material.

Although above condition is logical, if the requirement is very less, sometimes procurement may become difficult & vendor will be in a FIX. In such condition, vendor offers suitable equivalent material with valid technical reason & satisfies client.

Clamp material selection for the given design temperature may vary slightly between the client & support vendor. In such case the client material selection is taken as final.

If the clamp is to be on trunnion pipe which may be outside insulation, then we can go for material one grade less than that of the parent pipe size which will be at times cost effective. When there are two temperatures (design & operating), normally mechanical design is done based on design temp & spring/constant support etc are selected as per operating temp. movements. But this is totally client driven & lines are also analysed for design conditions & the supports selected has to meet the design condition also. Normally client specifies the mode of selection in their specification provided along with the technical data. Vendor has to comply the same. (For various technical reasons client might have used pipe material as SS(316L/316H), alloy steel(P92/P91/Gr22), FRP etc.

At times it becomes difficult/challenging task for the vendor to procure the same material specification for the clamps, with varying thickness in case the quantity is very less as compared to the minimum ordering quantity.

In such case, the quote will not be competitive as vendor is forced to procure minimum quantity of material of various specifications, thick etc which forces Vendor to quote high commercially.

2.Insulation Thickness – (mm)

The significance of Insulation thick is to be well understood. A few are explained below.

a-In hanging supports pipe clamps are used. (Normally called as 3 bolts clamp assembly for Insulated horizontal pipes).This clamp will have a pin at the top end through which the supporting component is connected. This pin should be sufficiently outside the insulation so that it is free to move in axial/lateral direction to accommodate the horizontal movements of pipe.

b-In certain supports (bottom supported arrangements) pipe clamp base is used along with slider assembly. In such cases the pipe clamp base bottom plate should be farther from insulation, so that pipe clamp is free to slide on the slider assembly.

c-Sometimes client provides pipe shoe or saddle below which the spring with or without slider assembly is to be offered by support vendor. Under such cases, client fixes the height of the shoe which sometimes may not clear insulation thickness. This pose problem in case the shoe height is already fixed & cleared for fabrication.

When client is unable to provide required assembly height to meet the above requirement, under exceptional cases "LOCAL REMOVAL" of insulation thickness at site may be sought to clear the above problem. But if this is the case to be followed at all such supports in a system totally, then this solution should not to be resorted to. It has to be considered as stray case only.

This clearance is very much essential as pin within the insulation restricts the horizontal (lateral & axial)thus inducing unnecessary loading on support which is not desirable. (Normally, a clearance of 50mm or at least 25 mm after insulation to clear the pin/pipe clamp base is considered for the reasons mentioned above.) With regard to the insulation, some interesting points are described below for the purpose of understanding.

Normally Hot insulation uses

a-Lightly bonded mineral wool-LBM (will be like a mat of varying thick fixed with wire mesh of proper material) or

b-calcium silicate (made of segments of different thick)
Depending on the operating temp, ambient temp, wind velocity, insulation density etc, the above Insulation (may be one or two layers to achieve the required thickness) is wound **OUTSIDE THE CLAMP**

ASSY.As such clamp ID will be based on the OD of parent pipe. So in hot pipes the clamp id is fixed for a given pipe size IRRESPECTIVE of insulation thick.
In **Cold insulation** puff blocks of different thick are used which will be directly assembled on the outer surface of parent pipe (may be one or two layers to achieve the required thick)

So, in Cold pipes the Clamp ID will be on the outer surface of the puff block. **As such for the same od of parent pipe, depending on the thk of puff block, the clamp ID will vary.**
The above aspect is to be born in mind while fixing/selecting clamp id.
Let us discuss further in the next issue. Till then bye!

For past newsletters please look up our website www.pipehangers.in

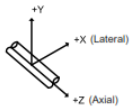
About Pipe Hangers:

A Global Solution to Spring Hangers and Supports

We are the leading manufacturer of spring hangers, supports & accessories. Over the past 35 years we have supplied to major power plants, refineries, nuclear installations & process industries in India & several International projects.

Pipe Hangers & Supports Private Limited

Ordering Information



1) Hot Load (Operating Load) in Kgs :
2) Thermal Movement / Travel (Direction + or -) in mm : UP (+) mm
3) Type of Hanger Variable / Constant /Rigid : VariableEffort Support
4) For Constant Add Over Travel : ☐ Yes ☐ No
5) For Variable Springs Max Allowable % Load Variation : %
6) Horizontal / Lateral Movement (If any) : 'X' Dir mm / 'Z' Dir mm
7) Hydro Load (If any) : Kgs
8) Model & Type of Support :
9) Assembly Length (From BOS/TOS to Pipe CL) : mm
10) Operating Temperature : Deg C
11) Pipe Insulation Thk : mm
12) Pipe Material :
13) Require Pipe Shoe for Foot Mounted Support : ☐ Yes ☐ No
14) For Foot Mounted Support Match Height : ☐ Yes ☐ No
15) Attachments like Lugs, Cleats Welded to Pipe in Scope : ☐ Yes ☐ No
16) Operating Load includes Wt of Accessories like Clamp, Tie Rods, Cleats, Lugs etc. : ☐ Yes ☐ No
17) Preferred Surface Protection / Painting :
18) For 'G' Type / Double / Trapeze type Hanger the Load Given above is for 1 assembly consisting of 2 Hangers / Individual Hanger : ☐ Yes ☐ No