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Chapter 1 : Top + Piping Interview Questions - Best Piping Interview Questions and Answers | Wisdom Job

The following list will provide few interview questions asked in different interview for a Piping Stress Engineer post. Hope you will be able to find the answers from ASME B and any piping stress text books or from piping hand book.

How to decide how many load bearing clip supports to be used? How tank Piping analysis is different from normal pressure vessel connected piping system analysis? Formulas for In plane, outplane sif for elbow B When these come into picture? Write the load cases for a typical stress system using static method of seismic and wind? What parameters are required to calculate Slug force? What is snubber and when do you use a snubber? What will you do if that amount exceeds in a typical piping system? What is the variability of Constant Spring hanger? What do you check in Caesar analysis of a piping system? Have you heard the term Pump alignment? What are the normal guidelines assumed? Explain with proper reason? Write equations used for flange leakage checking in pressure equivalent method? What are the attachments used? Why does the stress analysis of transfer lines considered critical? What is category M fluid service? What will be the consequences of a steam piping having low pocket but not having a steam trap? When and why the reducer of a pump suction piping is installed in bottom flat condition? What are the additional arrangements which a piping engineer should make for this? Assume a straight pipe of length L anchored at both ends. When a temp change occurs the anchor force at one anchor becomes F1. Now the length of the same pipw increased to L2 and with similar temp change anchor force becomes F2. What is the relation between F1 and F2? What is Piping Speciality item? How many types of piping speciality items are used in piping engineering? Can we include them in standard piping specification, explain with reason? Why does the sustained sagging for steam lines are limited within mm? When such type valves are required? In a normal tie-in where do you insert the spectacle blind? What is the difference between a pipe elbow and a bend? Among the following which material have the highest co-efficient of thermal expansion? What are the Metallic expansion joints? When they are used and when they could be avoided? What is hot sustained stress? Why do we check it? Do we need to check expansion stress for hot sustained case? What is the philosophy of arranging pipes in the Pipe rack and why? What are the major difficulties faced by a stress engineer while analysis two vertical reboilers connected with a single column? What are the different types of combination methods available in Caesar II? What is the difference between Scalar and Absolute method? Are process plant water lines considered pressure piping systems? For what fluid service category may a hydro test be waived off as per B Check the following load cases and tell me what is the difference between load case L3 and L4?

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Chapter 2 : Piping Stress Job Interview questions for you: Part 1 – What is Piping

Engineering interview questions, multiple choice questions, objective type questions, seminar topics, lab viva questions and answers, online quiz test pdf free download for freshers gate cat syllabus pdf

Stress due to occasional events like Seismic and Wind effects. What factors to consider for site selection? District classification, Transportation facilities, Manpower availability, industrial infrastructure, community infrastructure, availability of raw water, effluent disposal, availability of power, availability of industrial gas, site size and nature, ecology and pollution. Why Stress Analysis is required? Ensure reliability and safety of working by Limiting Stresses sustained, expansion, hydro-test, occasional within code allowable. Reducing damaging effects of dynamic loads. Avoiding leakage at joints. Limiting sagging and displacements within allowable limits. Avoiding high loads on supporting structures. What is the difference between Stress and Pressure? Stress is generated because of internal resistance force. Pressure is generated because of external force. Pressure can be a cause to generate stress. Where jacked screwed flange is used? For spectacle discs, one flange is jacked screw flange. This flange has two jacked screws degree apart which are used to create sufficient space between flange for easy removal and placement of line blind or spectacle blind. What is double block and bleed? Two valves with bleed ring in between with a bleed valve connected to the hole of bleed ring. Where blind flange is used? It is used with view to future expansion of the piping system, or for cleaning, inspection etc. What are crude oil ranges? Crude oil BP Range: What is batch shell process? What are types of towers? Stripper, Vacuum tower, trayed, packed towers. What is chimney tray? What factors to consider while setting tower elevation? NPSH, Operator access, Maintenance access, Minimum clearance, re-boiler type, common area, type of support, Tower dimensions, type of head, bottom outlet size, foundation details, minimum clearances. How to located tower maintenance access nozzles? At bottom, top and intermediate sections of tower, must not be at the down-comer section of tower and in front of internal piping. How to located feed nozzle? Must be oriented in specific area of tray by means of internal piping. What are the steps in selection of valve? What to handle, liquid, gas or powder, fluid nature, function, construction material, disc type, stem type, how to operate, bonnet type, body ends, delivery time, cost, warranty. What are functions of valves? Isolation, regulation, non-return and special purposes. What are isolating valves? Gate, ball, plug, piston, diaphragm, butterfly, pinch. What are regulation valves? Globe, needle, butterfly, diaphragm, piston, pinch. What are non-return valves? What are special valves? What materials are used for construction of valves? Cast iron, bronze, gun metal, carbon steel, stainless steel, alloy carbon steel, polypropylene and other plastics, special alloys. Trim is composed of stem, seat surfaces, back seat bushing and other small internal parts that normally contact the surface fluid. Which standard specifies trim numbers for valve? What are wetted parts of valve? All parts that come in contact with surface fluid are called wetted parts. What is wire drawing? This term is used to indicate the premature erosion of the valve seat caused by excessive velocity between seat and seat disc, when valve is not closed tightly. What is straight through valve? Valve in which the closing operation of valve is achieved by 90 degrees turn of the closing element. What pressure tests are carried out on valves? Shell-hydrostatic, seat-hydrostatic, seat-pneumatic. What are available valve operators? Handlever, handwheel, chain operator, gear operator, powered operator likes electric motor, solenoid, pneumatic and hydraulic operators, Quick acting operators for non-rotary valves handle lift. What are ball valve body types? Single piece, double piece, three piece, the short pattern, long pattern, sandwich and flush bottom design. What are two types of ball valve? Full port design and regular port design, according to type of seat, soft seat and metal seat. Why ball valves are normally flanged? Because of soft seat PTFE which can damage during welding. What are butterfly valve types? Double flange type, wafer lug type and wafer type. What are types of check valve? Lift check valves and swing check valves. What are non-slam check valves? Swing check valve, conventional check valve, wafer check valve, tilting disc check valve, piston check valve, stop check valve, ball check valve. Where stop check valve is used? In stem generation by

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multiple boilers, where a valve is inserted between each boiler and the main steam header. It can be optionally closed automatically or normally. Where diaphragm valves are used? Used for low pressure corrosive services as shut off valves. What is Barstock Valve? Any valve having a body machined from solid metal barstock. Usually needle or globe type. A small valve with turned down end, like a faucet. What is Bleed Valve? Small valve provided for drawing off liquid. What is BlowDown Valve? Refers to a plug type disc globe valve used for removing sludge and sedimentary matter from the bottom of boiler drums, vessels, driplegs etc. What is Breather Valve? A special self acting valve installed on storage tanks etc. What is Drip Valve? A drain valve fitted to the bottom of a droplet to permit blowdown. What is Flap Valve? A non return valve having a hinged disc or rubber or leather flap used for low pressure lines. What is Hose Valve? A gate or globe valve having one of its ends externally threaded to one of the hose thread standards in use in the USA. These valves are used for vehicular and firewater connections. What is Paper-Stock Valve? A single disc single seat gate valve Slide gate with knife edged or notched disc used to regulate flow of paper slurry or other fibrous slurry. What is Root Valve? A valve used to isolate a pressure element or instrument from a line or vessel, or a valve placed at the beginning of a branch from the header. What is Slurry valve? A knife edge valve used to control flow of non-abrasive slurries. What is Spiral sock valve? A valve used to control flow of powders by means of a twistable fabric tube or sock. What is Throttling valve?

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Chapter 3 : Piping Interview Questions and Answers - Part 01 - ObjectiveBooks

Home Piping Interview Piping Interview Questions and Answers What is the software available for performing piping stress analysis? Answer: Caesar II, AutoPipe etc.

A valve used to control flow of powders by means of a twistable fabric tube or sock. Any valve used to closely regulate flow in the just-open position. A special self-acting valve or any valve suitable for vacuum service, operated manually or automatically, installed to admit gas usually atmospheric air into a vacuum or low-pressure space. Such valves are installed on high points of piping or vessels to permit draining and sometimes to prevent siphoning. Quick acting valves are desirable in lines conveying flammable liquids. Unsuitable for water or for liquid service in general without a cushioning device to protect piping from shock. This valve switch flow from one main line to two different outlets. WYE type and pneumatic control type with no moving part. Usually of needle or globe pattern, placed in branch line for the purpose of drawing all samples of process material through the branch. It is a variety of globe valve conforming with boiler code requirements and specially designed for boiler blow-off service. WYE pattern and angle type, used to remove air and other gases from boilers etc. Valve to relieve excess pressure in liquids in situations where full flow discharge is not required, when release of small volume of liquid would rapidly lower pressure. Rapid opening popping action full flow valve for air and other gases. Valve used to maintain a head of water on the suction side of sump pump, basically a lift check valve with integrated strainer. Used to control liquid level in tanks, operated by float, which rises with liquid level and opens the valve to control water level. It can also remove air from system, in which case, air flows out of system in valve open condition, but when water reaches valve, float inside valve raises to close the valve and stop flow of water. Used in drip legs. Special type of valves used to drain out the piping, reactors and vessels, attached on pad type nozzles. Valves with discs opening into the tank and valves with disks into the valve. Alternate connection of the two supply lines to a common delivery vice versa, isolating one safety valve, division of flow with isolation facility. Reversal of pump suction and delivery, By pass of strainer or meter, reversal of flow through filter, heat exchanger or dryer. A plug valve with no plastic material, where grease is applied to contacting surfaces for easy operation. Regular pattern, short pattern and ventury pattern. Rectangular port, area almost equal to pipe bore, smooth transition from round body to rectangular port, for minimum pressure loss. Valves with face to face dimension of gate valve, as a alternative to gate valve. Change of section through the body throat so graded to have ventury effect, minimum pressure loss. Plug valve with taper portion up of plug. With holes in port top and bottom connecting two chambers on top and bottom of plug, to reduce turning effort. PTFE sleeve between plug and body of valve, low turning effort, minimum friction, temperature limitation, anti static design possible. Plug valves with Teflon seat instead of sleeves, for on-off applications, can handle clean viscous and corrosive liquids, Graphite seat for high temperature applications. Drip tight shut off not possible. Off center plug, corrosive and abrasive service, on off action, moves into and away from seat eliminating abrasive wear.

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Chapter 4 : Welding Interview Questions and Answers » The Piping Engineering World

Why do we provide drip leg in steam line? To remove condensate when there is a rise of same in the pipe along the flow direction. If drip leg is not provided in steam line, the condensate which forms inside the pipe will result in water hammer effect causing damage to piping system.

Cast iron, bronze, gun metal, carbon steel, stainless steel, alloy carbon steel, polypropylene and other plastics, special alloys. Trim is composed of stem, seat surfaces, back seat bushing and other small internal parts that normally contact the surface fluid. What are wetted parts of valve? All parts that come in contact with surface fluid are called wetted parts. This term is used to indicate the premature erosion of the valve seat caused by excessive velocity between seat and seat disc, when valve is not closed tightly. Valve in which the closing operation of valve is achieved by 90 degrees turn of the closing element. Shell-hydrostatic, seat-hydrostatic, seat-pneumatic What are available valve operators? Hand-lever, hand-wheel, chain operator, gear operator etc. American Society for Mechanical Engineers. The main differences are listed below: Material allowable stresses are different in both codes. Stress increases due to occasional loads are different in each code. Sustained stress calculation is specific in B The basic allowable stress is defined in respective code. For example as per B For structural grade materials 0. When to use these hangers? In Constant Spring hanger the load remains constant throughout its travel range. But In variable spring hanger the load varies with displacement. Spring hangers are used when thermal displacements are upwards and piping system is lifted off from the support position. Variable spring hanger is preferable as this is less costly. Constant springs are used: What is the industry approved limit for variability? Select the height from vendor catalog based on spring size and stiffness class. For base mounted variable spring hanger the height is mentioned directly. It is the spring height. What is the procedure? In your system first decide the location where you want to install the spring. Then remove all nearby supports which are not taking load in thermal operating case. Now run the program and the sustained load on that support node is your hot load. The thermal movement in that location is your thermal movement for your spring. Now assume variability for your spring. Now with spring constant and hot load enter any vendor catalog to select spring inside the travel range. Caesar II, AutoPipe etc.

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Chapter 5 : Piping Stress Analysis Interview Questions

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Each answer will appear to be wrong to some readers and right to others. Some questions will have what seems to be an absolute right answer. So if you have got any good answer for below questions, leave us a comment. Find more details see at the end of article. There is only one major difference between the two, B There is a power plant inside a Process refinery. Based on my experience there were two cases. Thus all piping inside the Power Plant was B Which of the following piping system is more health hazardous. There is a steam piping with low pocket but without steam trap. What will be worst consequence of this layout? There will be a build up of condensate to the point that a slug will be pushed by the steam flow. In what circumstance, the reducer of a pump suction piping will be in bottom flat position. Explain why the reducer should be so. When reducers are placed in pipe Rack they are generally bottom side flat to maintain BOP to facilitate supporting. What additional arrangements you have to make for that dissimilar material flange joint? Use the Gasket and bolts from the SS spec. A stainless steel piping specification mentions Galvanized carbons steel bolts. What is your first reaction ti this and how do you rectify it? If that is what the Spec call for then that is what I am supposed to use. How many types of piping specialty items do you know? Why it is called a piping special? Why not we include them in standard piping specification. I could possibly count 50 or more depending on the PME and how the piping material specs were developed. They are not included because they are normally of limited use, purchased from a limited product line vendor and are often after thoughts. Draw a typical steam trap station layout and explain why the existence of a by-pass line around the trap is not a good idea, when the condensate is returning to a condensate header? No drawing It is not advisable to have a bypass around a steam trap because the block valve could be left open and defeat the purpose of the trap. Why we need a bleed valve? When do we use this? However it is not fail safe. The higher level of safety would be double block valves with a removable spool for absolute isolation. In a typical tie-in where should the spectacle blind be inserted? This placement allows for the closing of the Unit isolation block valve, the unit side is depressured and drained. Then the spec blind can be installed for isolation of the unit. Stress Intensification Factor SIF is a multiplier on nominal stress for typically bend and intersection components so that the effect of geometry and welding can be considered in a beam analysis. Stress Intensification Factors form the basis of most stress analysis of piping systems. As for the quantity, ask a Stress Engineer. When all design parameters are same, whose thermal expansion is higher among the following? If they are all the same then the hoses can be connected to the wrong services and could result in the injury of an operator i. What is your view on the usage of Metallic expansion joints? When they become necessary and when they could be avoided? I do everything I can as a piping designer to avoid the use of all types of expansion joints. Expansion joints are always the weakest point in any system where they are used. A water cooler heat exchanger, located on a 20 m high structural platform. What precaution do you take, in case of Pressure loss in cooling water header? I do not understand this question it does not appear to be a piping issue. I would assume that the cooling water system has a loss of pressure sensor and the plant shut-down alarms and sequence would be activated. In what order do you arrange the pipes in the Pipe rack and why? The largest hottest lines on the outside edge of the pipe rack working in with cooler lines in towards the middle of the rack. This allows the longer loop legs as you lay the loops back over the other lines to the other side of the rack and back. When a utility line like condensate or water etc is connected permanently to a process piping what precaution we have to take to avoid cross contamination? Option 1, double block valve with a drop-out spool. Option 2, Double block valve with a spec blind. Option 3, double block valves with a bleed valve. A air fin cooler 2 air coolers with each having 2 inlet nozzles needs a Typical piping arrangement. How many types of piping arrangement is possible. Thanks to for the answers Mahathir Che Ap Piping Designer SBMOffshore Still some answers are not so much satisfactory with total explanation, so if any of you does not agree with any of the above answers, give me feedback by

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Chapter 6 : Mechanical Piping Objective Questions and Answers - Part 05 - ObjectiveBooks

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Chapter 7 : Piping Stress Job Interview questions “ What is Piping

So, trace out your career as piping designer, structural designer, piping engineer, junior mechanical engineer, steam fitter and so on by seeing through the below offered piping job interview questions and answers.