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Technical Instruction

Pipes



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1 Purpose

This Technical Instruction describes the activities to be carried out when dealing with piping.

2 General

In order to ensure safe and reliable operation of the plant, all piping must be treated in accordance with the following requirements.

DANGER



Escaping media

Piping systems in the plant are pressurized and/or contain hot and hazardous media. Faulty piping is a hazard for persons and equipment.

WARNING



Dirt contamination of the system

Contamination from dirty piping can adversely affect plant operation and result in damage.

3 Compression resistance and leak tests

Piping must be tested for leaks and compression resistance using suitable test methods and under observance of local requirements and regulations.

Carrying out the tests in accordance with regulations and interpreting the results correctly may only be carried out by trained and qualified personnel.

3.1 Testing for leaks by introducing gas and building up the pressure

Piping can be tested for leaks by introducing gas and building up the pressure.

All openings must be sealed off with special equipment for this. Gas is then introduced, the pressure built up and the system completely sealed. The pressure must be observed over a period of time. If a drop in pressure is ascertained and the pressure difference exceeds specified limit values, the leak must be located and sealed.

3.2 Using a foaming agent to locate a leak

A suitable foaming agent can be sprayed or brushed on to hazardous areas to locate leaks. The system must be maintained under pressure during the test.

After a stabilisation period of several minutes, foam will start to form at the leak. The speed of the foam production will depend on the size of the leak. A test period of at least 3 minutes must be maintained.

A foam mushroom growing at a certain location must be interpreted as representing a leak.

4 Welding

Welding work may only be carried out by trained personnel, under observance of applicable requirements and regulations.

5 Clean

Piping must be completely free inside and outside of heat discolouration marks, scale, slag residues, extraneous iron and the like.

Pipe ends must be free from burrs.

When visually inspected without magnifying means, the surfaces must be visibly free from oil, grease and dirt. Any traces of scales, rust, coating or other foreign impurities remaining after cleaning must be limited to slight, stainlike or streaked shades. Any residues must adhere firmly to the surface.

5.1 Cleaning non-stainless steel piping

All dirt and test-medium residues must be removed from the entire pipe inside surface.

Weld surfaces can be cleaned by brushing, grinding or blasting (iron-free quartz sand or glass beads).

Stainless steel brushes must be used for brushing.

5.2 Cleaning stainless steel piping

All dirt and test-medium residues must be removed from the entire pipe inside surface.

Weld surfaces can be cleaned by brushing, grinding, pickling or blasting (iron-free quartz sand or glass beads).

Stainless steel brushes must be used for brushing.

Pickling must be followed by thorough rinsing with water.

Dispose of pickling agent and waste water carefully!

6 Corrosion protection

Cleaned piping must be protected against corrosion by suitable measures such as painting.

Priming

Areas: Inside and outside

Type: Wetterwart zinc AL 600 +

Coating thickness: 40 – 70 µm

Top coat

Zone: Outside

Type: Alposil LTW protective coating /Messrs. Feycolor

After cleaning and painting, any pipe ends and other openings must be completely closed off.

Outdoor storage is not allowed

7 Preservation of cleaned pipes

Preserve pipes with a suitable agent after cleaning.

e.g. oil line - engine oil, cooling water lines - coolant.

8 Revision code

Revision history

Index	Date	Description / Revision summary	Expert Auditor
3	10.04.2019	GE durch INNIO ersetzt / GE replaced by INNIO	Stojiljkovic T. <i>Pichler R.</i>
2	-	Beizen von Rohren GELÖSCHT / Pickling pipes DELETED	Provin <i>Madl</i>
		Schweißanforderungen NEU / Welding requirements NEW	
		Reinigen/Korrosionsschutz von Rohrleitungen NEU / Cleaning/corrosion protection of pipes NEW	
1	26.05.2010	Umstellung auf CMS / Change to Content Management System ersetzt / replaced Index: c	Schartner <i>Giese</i>

