

## Piping – recommendations for the selection, classification and inspection of materials and

### Scope

Information within brackets ([...]) in this document refers to local regulations.

This standard is intended for use as support for the creation of pipe systems. In the event of ambiguities, Swedish Work Environment Authority Documents [AFS 2016:1 and AFS 2017:3] apply. Recommendations for the choice of materials in pipe systems and associated components and their classification and inspection, are provided in the appendices based on the fluid codes and fluid data. For a summary of SSG PED pipe classes, see [SSG 7829E](#).

In addition to the standard, there is an editable appendix that makes it possible to manage local plant-specific fluid codes. If necessary, the appendix can also be used to give SSG comments for future revisions of this standard. Then send the appendix to [support@ssg.se](mailto:support@ssg.se).

### Changes since the previous edition

This edition differs from the previous edition in that:

- Section 1 – "Related documents" has been updated.
- Section 3 – "Bases for classification" has been updated with information regarding hazardous work in a hazardous atmosphere.
- Section 6.4 – "Flange guard" has been added.
- References has been updated.
- In Appendix 1: – "Appendix – "Fluid group A – Additives"" fluid code A55 has been updated with hazard statement H290, H318 and pictogram code GHS05.
- In Appendix 2: – "Fluid group B – White water" the maximum operating temperature has been changed to 97 °C for fluid codes B57 and B58.
- In Appendix 3: – "Fluid group C – Condensate" fluid codes C26 and C42 have been updated with hazard statement, hazard category and pictogram. For fluid code C42, the remark "Fatal if inhaled" has been added. The remark "Observe H<sub>2</sub>S levels" has been added for fluid code C43.
- In Appendix 7: – "Fluid group G – Gas" fluid codes G20, G27, G29, G30, G31, G50, G51 and G90 have been reviewed and updated.
- In Appendix 11: – "Fluid group K – Chemicals in the fluid phase and solid form" fluid codes K44, K60, K62, K90-K92 have been reviewed and updated. Fluid codes K100 (Formic acid) and K106 (Hydrogen peroxide, solution) have been added.
- In Appendix 12: – "Fluid group L – Lye, lye byproducts" fluid code L77 (Pitch [tall oil pitch]) has been clarified with a footnote for classification according to [AFS 2017:3].

- 
- Information about used oil has been added to Appendix 15: – ”Fluid group O – Oil, oil pollutants, lubricating oil, fossil fuels”.
  - Fluid code VO1 (Exhaust, sulphate digester) in Appendix 22: – ”Fluid group V – Evaporation, evacuation” has been reviewed and updated with a new hazard statement.
  - The operating temperatures for fluid code WO5 and WO6 in Appendix 23: – ”Fluid group W – Water” have been updated. Fluid codes W61 (Water, softened warm) and W62 (Water, softened hot) have been added.
  - In the editable appendix (Appendix X: – ”Deviant fluid codes”) footnote <sup>6)</sup> has changed.

---

**Contents**

<b>1</b>	<b>Related documents</b>	5
<b>2</b>	<b>Terms and definitions</b>	5
<b>3</b>	<b>Bases for classification</b>	5
3.1	Criteria for new fluid codes	5
3.2	Local fluid codes	6
3.3	Applying for new codes	6
<b>4</b>	<b>Fluid data/pressure classes</b>	6
<b>5</b>	<b>Recommendations for the selection of materials</b>	6
5.1	Corrosion	7
5.1.1	Chlorides in process solutions	7
5.1.2	Chlorides and crack formation through stress corrosion (SCC)	7
5.1.3	External corrosion	8
5.2	Cleaning agents	8
5.3	Liquid phase	8
5.4	Gas phase	8
5.5	Titanium	8
5.6	Plastics	8
<b>6</b>	<b>Recommendations for the selection of components</b>	10
6.1	Pipes and pipe fittings	10
6.2	Valves	10
6.3	Recommendations for the choice of gasket material	10
6.4	Flange guard	10
<b>7</b>	<b>Recommendations for the design of insulation, marking and mounting</b>	11
7.1	Pipe insulation	11
7.2	Pipe markings	11
7.3	Pipe supports	11
<b>8</b>	<b>Manufacturing and classification</b>	11
8.1	Pipelines > 0.5 bar	11
8.2	Pipelines ≤ 0.5 bar and transport pipelines	13
<b>9</b>	<b>Inspection, plant inspection and classification</b>	13
9.1	Inspection	13
9.2	Plant inspection	13
9.3	Service life	13
<b>10</b>	<b>Materials and the scope of circumferential weld testing</b>	14
<b>11</b>	<b>References</b>	15

**Appendix 1: Appendix – “Fluid group A – Additives”**

**Appendix 2: Fluid group B – White water**

**Appendix 3: Fluid group C – Condensate**

**Appendix 4: Fluid group D – Waste**

**Appendix 6: Fluid group F – Fibre raw materials and parts thereof**

**Appendix 7: Fluid group G – Gas**

**Appendix 8: Fluid group H – Hydroxyl**

**Appendix 11: Fluid group K – Chemicals in the fluid phase and solid form**

**Appendix 12: Fluid group L – Lye, lye byproducts**



**Appendix 13: Fluid group M – Sludges and pigments**

**Appendix 15: Fluid group O – Oil, oil pollutants, lubricating oil, fossil fuels**

**Appendix 16: Fluid group P – Pulp and fibre suspension**

**Appendix 19: Fluid group S – Steam**

**Appendix 22: Fluid group V – Evaporation, evacuation**

**Appendix 23: Fluid group W – Water**

**Appendix 30: Hazard pictograms and priority principles according to the CLP ordinance**

**Appendix X: Deviant fluid codes**