

# Content

The arc and its electrical properties.....	E.1
Striking the arc and processes in the arc .....	E.1
Properties of the arc .....	E.1
Electrical circuit.....	E.2
Manual metal arc welding.....	E.3
Welding transformer .....	E.4
Assemblies .....	E.4
Transistor power supply with a primary cycle.....	E.5
Welding accessories in the welding current circuit.....	E.6
Connecting or servicing work on the welding power supply .....	E.7
Stick electrodes to DIN EN ISO 2560.....	E.8
Designation of a stick electrode to DIN EN ISO 2560, Variant A.....	E.8
Common stick electrodes .....	E.11
Arc blow.....	E.12
Personal safety gear.....	E.13
Optical radiation, slag.....	E.14
Electric current.....	E.15
Welding voltage side .....	E.16
Hazardous substances and their effects .....	E.17
Safety precautions.....	E.17
Noise .....	E.18
Fire prevention .....	E.18
Welding in areas at risk of fire and explosion.....	E.19
Welding in confined space.....	E.20
Working with an elevated electrical risk.....	E.21
Welding of containers with hazardous content.....	E.22
Welder test to DIN EN 287-1:2011-11 .....	E.23
Designation of welder test .....	E.25
Welding positions .....	E.26
Joint preparation – summary and terms .....	E.27
Flame cutting .....	E.28
Cutting gases .....	E.28
Operations when flame cuttin.....	E.28
Illustrations of weld joints.....	E.29
Reference symbol.....	E.29
Symbolic illustration of weld joints.....	E.30
Joint preparation examples depending on workpiece thickness, accessibility and welding process.....	E.31
Use of fillet welds in steel construction .....	E.32
Examples of welding joints from steel and container construction .....	E.33
Suitability for welding of a component.....	E.33
What is steel?.....	E.35
Names of steel.....	E.36

Suitability for welding of unalloyed structural steels .....	E.37
Shrinkage during welding .....	E.38
Order of magnitude of shrinkage during welding.....	E.39
Inherent welding stresses.....	E.40
Effect of inherent welding stresses .....	E.40
Summary of key weld imperfections.....	E.41
Weld imperfections and their possible causes – shown by the example of fillet weld .....	E.42