

GENERAL TECHNICAL DATA SHEET

Manufacturing requirements for handle spindles in relation to the standards

EN 1125 - EN 179 - EN 1906 - DIN 18273

Document	General technical data sheet	Revision	00
Subject	Handle spindles / transmission components	Date	

1. Purpose of this data sheet

This data sheet defines, in general terms, the characteristics according to which handle spindles must be manufactured so that they may be used in handles, fittings and complete devices subject to standards EN 1125, EN 179, EN 1906 and DIN 18273.

The spindle is a mechanical component intended to transmit movement between the handle, lock, emergency exit device or panic exit device.

Important note

The indicated standards certify the complete device, complete handle or complete fitting. The individual spindle does not constitute a product that can be certified independently under these standards, but it must be manufactured with characteristics consistent with the assembly in which it will be installed.

2. Reference standards and manufacturing requirements for spindles

Standard	Application of the standard	How our spindles must be manufactured
DIN 18273	Fittings for fire-resistant and smoke-control doors.	Steel spindle, normally with a 9 x 9 mm section unless otherwise specified by the system, geometry compliant with the approved drawing, free from cracks/deformations and suitable for the cyclic test of the complete fitting.
EN 179	Emergency exit devices operated by lever handle, push pad or equivalent control.	Spindle with precise coupling with handle and lock, smooth rotation, controlled tolerances, no excessive play, and no deformation or failure during use of the complete device.
EN 1125	Panic exit devices operated by horizontal bar.	Spindle manufactured according to the validated drawing of the device, suitable for transmitting the control action if it is a functional part, dimensionally stable and free from defects that could compromise opening.
EN 1906	Lever handles and knob furniture for doors.	Spindle with controlled section, constant tolerances, good straightness, burr-free surfaces, torsion resistance and suitability for repeated use of the complete handle.

3. Specific requirements by standard

3.1 DIN 18273 - Fittings for fire-resistant and smoke-control doors

Requirement	Characteristic required of the spindle	How it is verified / certified
Material	The spindle must be made in steel, unless a different configuration, approved by the manufacturer of the complete fitting.	Certificate of raw material, supplier declaration or document check of the material used.

Requirement	Characteristic required of the spindle	How it is verified / certified
Section	For DIN 18273 applications, the square section is normally 9 x 9 mm, unless a different specification has been approved within the system.	Dimensional check of square/section dimensions and comparison with the approved drawing.
Geometry	Length, chamfers, holes, grooves and machining operations must comply with the drawing approved by the customer/manufacturer of the fitting.	Dimensional and visual inspection against the technical drawing.
Cyclic resistance	The spindle, when installed in the complete fitting, must not contribute to the formation of cracks, breakages, deformations or play that could compromise operation after the specified cycles.	Cyclic test on the complete fitting. The individual spindle may be checked dimensionally or subjected to mechanical tests only if requested by the customer.
Fire/smoke suitability	The spindle must correspond to the approved configuration for the fitting intended for a fire-resistant or smoke-control door.	Verification and certification are the responsibility of the manufacturer of the complete fitting or door system.

3.2 EN 179 - Emergency exit devices operated by handle or push pad

Standard requirement	Characteristic required of the spindle	How it is verified / certified
Operation	The spindle must correctly transmit movement between the handle, lock and emergency exit device.	Functional test on the complete device.
Resistance to 200,000 cycles	The spindle must not deform, break or generate play that could compromise opening during and after repeated use.	Cyclic test on the complete device. The spindle alone is not certified according to EN 179.
Door mass 100 kg / 200 kg / above	The spindle must be sized and manufactured according to the drawing specified for the device intended for the specific door mass.	Test of the complete device on a door or test bench suitable for the declared mass.
Fire/smoke classification 0 / A / B	The spindle must be identical to the validated configuration: material, section, length, treatment and geometry must not be changed without approval.	Tests/reports on the complete device or on the device-door combination.
Corrosion grade 3 or 4	The material and/or treatment of the spindle must be compatible with the corrosion class required for the complete device.	Corrosion test on the treated component or on the complete assembly, according to customer/laboratory specification.
Finish and defects	The spindle must be free from burrs, cracks, deformations, sharp edges and visible defects.	Visual inspection and batch dimensional inspection.

3.3 EN 1125 - Panic exit devices operated by horizontal bar

Standard requirement	Characteristic required of the spindle	How it is verified / certified
Operation by bar	If the spindle is part of the operating system, it must ensure safe, smooth and constant transmission of movement.	Functional test on the complete panic bar/panic exit device.
Resistance to 200,000 cycles	The spindle must not deform, break or generate play that could compromise opening of the device during repeated use.	Cyclic test on the complete device. The individual spindle is checked or tested only if requested by the customer.
Door mass up to 200 kg	The spindle must comply with the drawing, section, length and tolerances specified for the device certified for that door mass.	Test of the complete device on a door or test bench suitable for the specified mass.
Fire/smoke classification A or B	The spindle must correspond to the approved configuration for the device intended for a smoke-control door or fire-resistant/smoke-control door.	Certification/tests of the complete device or door-device combination.
Corrosion grade 3 or 4	The spindle must have material/treatment compatible with the corrosion class of the complete device.	Corrosion test on the component or complete assembly according to

Standard requirement	Characteristic required of the spindle	How it is verified / certified
		customer/laboratory request.
Unchanged geometry	The spindle must be manufactured according to the validated drawing; changes to material, section, length, treatment or machining operations must be approved.	Dimensional inspection and comparison with the approved drawing.

3.4 EN 1906 - Lever handles and knob furniture for doors

Standard requirement	Characteristic required of the spindle	How it is verified / certified
Handle operation	The spindle must correctly transmit rotation from the handle to the lock, without sticking.	Functional test on the complete handle.
Square/profile section	The section must be precise and consistent, with tolerances that avoid excessive play or interference.	Dimensional inspection of section/square.
Torsion resistance	The spindle must withstand the torque transmitted by the handle without permanent deformation or breakage.	Torsion test on the spindle or complete handle, when requested by the customer.
Durability	The spindle must maintain its shape and function during repeated use of the handle.	Cyclic test on the complete handle.
Wear and play	The spindle must not cause an excessive increase in play between the handle and the lock.	Verification of play before and after the cyclic test on the assembly.
Finish	Surfaces free from burrs, cracks, deformations and sharp edges; chamfers and machining operations compliant with the drawing.	Visual and dimensional inspection.
Corrosion	If required, the treatment must be compatible with the corrosion class specified for the complete handle.	Corrosion test on the component or assembly according to customer specification.

4. How the main requirements are verified

Requirement	Verification method	Where it is verified
Resistance to 200,000 cycles	The spindle is installed in the complete device, handle or fitting and automatic opening/closing cycles are performed. After the test, breakages, cracks, deformations, play and operation are checked.	Complete device/handle/fitting.
Door mass	The complete device is tested on a door or test bench representing the declared door mass. The spindle must not deform and must not prevent opening, return or operation.	Complete device.
Fire/smoke classification	It is verified that the complete device or fitting is suitable for the required classification. The spindle must be identical to the approved configuration.	Complete device, complete fitting or door system.
Corrosion grade 3 / grade 4	A corrosion test is performed on the treated component or complete assembly. After the test, there must be no phenomena that compromise operation and couplings.	Component or complete assembly, according to customer/laboratory request.
Torsion	Torque is applied to the spindle or complete handle to verify the absence of breakages and permanent deformations.	Individual spindle or complete handle, if required.

5. Inspections that may be performed on the spindles

Inspection	Purpose
Dimensional inspection	Checks dimensions, section, length, holes, grooves, chamfers and machining operations against the drawing.
Visual inspection	Checks absence of burrs, cracks, deformations, sharp edges and visible defects.
Straightness inspection	Checks that the spindle allows regular assembly and rotation.
Coupling inspection	Checks compatibility with the handle, lock or device, when samples or customer specifications are available.
Torsion test	May be performed at the customer's request to verify resistance to rotational torque.
Surface treatment inspection	May be performed if included in the supply, to verify conformity with the customer's request and maintenance of functional dimensions.

6. Final note on regulatory compliance

Recommended wording

The spindles are manufactured according to the technical drawing and customer specifications, with dimensional, geometric and mechanical characteristics suitable for use in handles, fittings and complete devices subject to standards EN 1125, EN 179, EN 1906 and DIN 18273.

Compliance with the indicated standards must be verified and declared by the manufacturer of the complete product. The individual spindle, not being a panic exit device, emergency exit device, complete handle or complete fitting, is not subject to independent certification under these standards.