

SPIROL produces Slotted Pins to both the American National Standard, ASME B18.8.4M, and the International Standard, ISO 8752 (EN 28752). It is our recommendation that you consider ASME pins for all new applications and for your current applications if you are experiencing insertion problems or performance failures. Our recommendation is based on these important advantages of ASME pins:

- **Lower insertion force** as a result of the smaller free diameter of the pin in relation to the nominal hole. The pin is securely retained in the hole based on increased wall thickness, higher minimum hardness, and the minimal slot after insertion.
- **No interlocking** because the maximum gap in the free diameter state is always less than the wall thickness of the pin.
- **Higher shear strength** based on increased wall thickness, a higher minimum hardness, and narrower slots which close under load to ensure that the pins fail instantaneously rather than progressively in shear.
- **Available with zinc plate for added corrosion resistance.** Not only will ISO pins interlock during the plating process, but in the event that they become loose again after plating, there will be sections of the pin that are not plated. ASME Slotted Pins are designed with a gap that prevents interlocking, therefore platings and coatings can be applied without fear of the parts interlocking during processing.

SHEAR STRENGTH COMPARISON

Nom. Dia.	ISO kN	ASME kN	Increase %
1.5	1.58	1.8	13.9
2	2.82	3.5	24.1
2.5	4.38	5.5	25.6
3	6.32	7.8	23.4
4	11.24	12.3	9.4
5	17.54	19.6	11.7
6	26.04	28.5	9.4
8	42.76	48.8	14.1
10	70.16	79.1	12.7
12	104.1	104.1	0



COMPARISON OF RECOMMENDED HOLES

ASME recommends tolerance class H10 for holes up to 2.5mm and H12 for diameters 3mm and larger. ISO recommends H12 for all diameters.

Nom. Dia.	ISO	ASME
1.5	1.5 / 1.6	1.5 / 1.56
2	2 / 2.1	2 / 2.07
2.5	2.5 / 2.6	2.5 / 2.58
3 and up	No difference	No difference

ASME pins 3mm and larger can be substituted for ISO pins without any review or change. 1.5mm to 2.5mm pins require a change in the maximum specified hole.

COMPARISON OF TECHNICAL SPECIFICATIONS

Expanded Diameter – ASME pins have a smaller expanded or free diameter relative to the nominal hole.

Chamfer Specification – ASME specifies a maximum chamfer diameter from 0.1mm to 0.5mm smaller than the nominal hole diameter whereas ISO only specifies a chamfer diameter less than the nominal hole diameter.

Straightness – ASME specifies a straightness requirement. ISO does not address it at all.

Shear Strength – ASME specifies a minimum double shear strength for austenitic stainless steel. ISO does not.

Wall Thickness – ASME pins have a wall thickness equal to or greater than ISO pins and a greater cross sectional area based on both thickness and strip width.

Hardness – The ASME specification for carbon steel is higher (HV 458-560 vs HV 420-520) to maximize the tensile strength and for chrome stainless it is slightly lower (HV 423-544 vs HV 440-560) to avoid the risk of brittleness.

Length Tolerance – The differences are minimal:

Pin Length	ISO	ASME
4 - 10mm	± 0.25mm	± 0.40mm
12 - 24mm	± 0.50mm	± 0.40mm
26 - 50mm	± 0.50mm	± 0.50mm
55 - 75mm	± 0.75mm	± 0.60mm
80 - 100mm	± 0.75mm	± 0.75mm

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SPIROL Application Engineers will review your application needs and work with you to recommend the optimum solution. One way to start the process is to visit our **Optimal Application Engineering** portal at **SPIROL.com**.