

**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.
- **Available with zinc plating 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. Therefore, SPIROL does not offer ISO pins with zinc plating.
- **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.

### 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 Ø2.5mm and H12 for Ø3mm 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 Ø3mm and larger can be substituted for ISO pins without any review or change. Pins Ø1.5mm to Ø2.5mm require a relatively minor reduction in the maximum specified hole.

### COMPARISON OF TECHNICAL SPECIFICATIONS

**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 hardness specification for ASME is higher for carbon steel and lower for martensitic stainless steel as compared to ISO. The allowable ranges of hardness overlap significantly, but the mean hardness of each is different. Proper manufacturing practices employing SPC will result in hardness values that are indistinguishable between standards for each material.

**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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