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Westfield Fasteners Product Specification:

DIN 7980 - Square Section Helical Spring Washers

This product guide contains the specification for helical spring washers with a square cross section, for use with metric sized fasteners. These washers are standard inventory items at Westfield Fasteners. The basis of this specification is the DIN standard DIN 7980.

Product Description

Helical spring washers are also known as split washers, and are designed to help prevent loosening of bolted joints when subjected to vibration. This type has a square cross section and is generally used with small cylindrical headed screws or bolts such as socket caps or cheese heads, and is manufactured to DIN 7980.

Scope of the DIN standard.

DIN 7980 specifies the scope and field of application for spring type lock washers with a square profile. Designed to be used with bolts and nut assemblies with property classes of less than 8.8. These spring washers do not effectively prevent loosening if the assembly is under a varying radial load. They are designed for use with short bolts, subjected to thrust. Helical spring washers should be fitted to the nut end of a bolted joint.

Figure 1 and table 1 below illustrate the dimensions and tolerances. Figure 1 shows the usual spring washer shape for a right hand thread. To be most effective, a spring washer with a reversed coil should be used when employed with left hand threads.

Washer cross section
(enlarged)

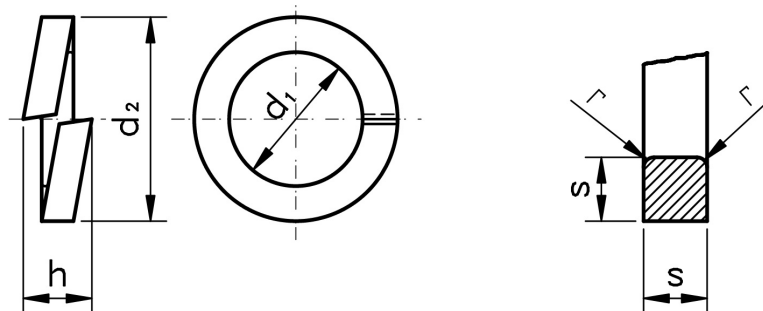


Figure 1: Helical Spring Washer with Square Section

Table 1: Dimensions & Tolerances according to DIN 7980

Nominal Size	3	3.5	4	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	42	48	
d ₁	min	3.1	3.6	4.1	5.1	6.1	8.1	10.2	12.2	14.2	16.2	18.2	20.2	22.5	24.5	27.5	30.5	33.5	36.5	42.5	49
	max	3.4	3.9	4.4	5.4	6.5	8.5	10.7	12.7	14.7	17	19	21.2	23.5	25.5	28.5	31.7	34.7	37.7	43.7	50.5
d ₂	max	5.6	6.1	7	8.8	9.9	12.7	16	18	21.1	24.4	26.4	30.6	32.9	35.9	38.9	44.1	47.1	52.2	60.2	67
s	-	1	1	1.2	1.6	1.6	2	2.5	2.5	3	3.5	3.5	4.5	4.5	5	5	6	6	7	8	8
	Tolerance	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.15	+/-0.15	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.25	+/-0.25	+/-0.25
h	min	2	2	2.4	3.2	3.2	4	5	5	6	7	7	9	9	10	10	12	12	14	16	16
	max	2.36	2.36	2.83	3.78	3.78	4.72	5.9	5.9	7.1	8.25	8.25	10.6	10.6	11.8	11.8	14.2	14.2	16.5	18.9	18.9
r		0.2	0.2	0.2	0.2	0.3	0.5	0.8	0.8	1	1	1	1	1	1.6	1.6	1.6	1.6	1.6	2	2
For thread size		M3	M3.5	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M42	M48

For further details, please refer to the ISO/DIN standard document for this item.

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