75 KDH

Oil tempered SiCrV-alloyed spring wire

75 KDH is especially intended for the manufacture of springs exposed to high static loads or low cycle fatigue applications specially intended for trunk opening springs.

75 KDH is a SiCrV spring steel with elevated tensile strength.

The material has good relaxation properties. The wire is manufactured in sizes from Ø 2.50 to 5.00 mm. Other wire sizes on request.

CHEMICAL COMPOSITION

C (%)	Si (%)	Mn (%)	P max. (%)	S max. (%)	Cr (%)	V (%)
0.50 - 0.70	1.35 - 1.60	0.40 - 0.80	0.025	0.020	0.50 - 0.80	0.05 - 0.20

CLEANLINESS IN STEEL

Non-metallic inclusions:
Max. level 2 according to DIN 50602-M.
Corresponding standard: ASTM E-45-A.

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MECHANICAL PROPERTIES

1) Other wire sizes on request.
2) Ovality, i. e. the difference between the largest and smallest dimension of a cross section, is maximum half the tolerance range.
3) Conversion from tensile strength to hardness values can be calculated in standard ISO EN 18265. The tensile strength Rm within one coil does not vary more than 60 N/mm^2.
4) Torsion test is carried out for assessing deformability. The fracture of the torsion test piece shall be smooth and perpendicular to the wire axis. The rupture shall show no longitudinal cracks.

FOR ROUND WIRE

Diameter (mm)	Tolerance (± mm)	Tensile Strength (N/mm^2)	Torsions (l=300 mm, min. revs)	Reduct. of area (min. %)
2.50 - 3.20	0.020	2240 - 2340	4	40
3.21 - 3.50	0.025	2240 - 2340	3	40
3.51 - 4.00	0.025	2220 - 2320	3	40
4.01 - 4.50	0.025	2220 - 2320	3	38
4.51 - 5.00	0.030	2200 - 2300	3	38

YIELD POINT

The proof stress $R_{p0.2}$ is min. 0.87 x tensile strength of the wire.

SURFACE CONDITIONS

SURFACE CONDITION

Surface condition – end sample test
The wire is end sample tested by means of etch testing and binocular inspection as well as microscopical inspection of the material structure.

Max. permissible depth of partial surface decarburization and surface defects, 1.3% x wire diameter. No complete decarburization allowed.

PHYSICAL PROPERTIES

E AND G MODULUS OF ELASTICITY

206 kN/mm^2

E AND G MODULUS OF SHEAR

79.5 kN/mm^2

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STANDARDS

NEAREST EQUIVALENT STEEL GRADES

EN TDSiCrV

NEAREST EQUIVALENT STANDARDS

EN 10270-2

RECOMMENDATIONS

HEAT TREATMENT

As soon as possible after coiling, the springs should be stress relieved.

HOT PRESETTING

After shot peening, the springs should be hot preset or
stress relieved. In order to reach optimum fatigue and relax- ation properties, the springs must be preset at an appropriate stress.

SHOT PEENING

In order to obtain optimum fatigue properties, the process time should be adjusted to get a complete treatment. Size of shots should be adapted to wire dimension, pitch and shot peening equipment. Shot peening of the inside of the spring coils is particularly critical.