

STATO 75

Oil tempered SiCrV-alloyed spring wire (according to EN 10270-2; 2011 FD SiCrV)

STATO 75 is especially intended for the manufacture of springs exposed to static or moderately high fatigue stresses. The material has good relaxation properties.

The wire is manufactured in sizes from \varnothing 2.00 mm to 7.00 mm. Other wire sizes on request.

Chemical composition

Element	Weight %
C	0.50% - 0.70%
Si	1.20% - 1.65%
Mn	0.40% - 0.90%
P max.	0.030%
S max.	0.025%
Cr	0.50% - 1.00%
V	0.10% - 0.15%

Mechanical properties

Table definitions

Reduct. of area: Min No of twists in the torsion test, Nt, are to be agreed upon.

For round wire

Diameter (mm)	Tolerance (mm)	Tensile Strength (N/mm ²)	Reduct. of area (min. %)
2.00 - 2.50	±0.025	2160 - 2310	45
2.51 - 2.70	±0.025	2110 - 2260	45
2.71 - 3.20	±0.030	2110 - 2260	45
3.21 - 3.50	±0.030	2110 - 2260	42
3.51 - 4.00	±0.030	2060 - 2210	42
4.01 - 5.00	±0.035	2060 - 2210	40
5.01 - 5.60	±0.035	2010 - 2160	38
5.61 - 6.00	±0.040	1960 - 2110	38
6.00 - 6.50	±0.040	1960 - 2110	35
6.51 - 7.00	±0.040	1960 - 2110	35

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, 1.5% x wire diameter. No complete decarburization allowed.

Technical specification

Property	Value
E modulus of elasticity	206 kN/mm ²
G modulus of shear	79.5 kN/mm ²

Steel grades and product standards

Nearest equivalent product standards	EN 10270-2
Nearest equivalent steel grades	EN FDSiCrV

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 relaxation 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.