

# Spring Steel Wire Roeslau „R20 FD“ SiCrV alloyed oil tempered



## **Application:**

Oil tempered SiCrV alloyed spring steel wire for static stress.

## **Range of diameters:**

The wire is manufactured from 2,50 mm – 6,00 mm in round section.

## **Chemical composition (%):**

C	Si	Mn	Cr	P max.	S max.	V
0,50 - 0,70	1,20 - 1,65	0,30 - 0,90	0,40 - 1,00	0,025	0,020	0,05 - 0,25

## **Raw material:**

Specially treated wire rod acc. to Roeslau prescription.

## **Mechanical properties:**

The deviation of tensile strength within one coil is max. 70 N/mm<sup>2</sup>. – The tensile strength is related to the real cross section.

Nominal wire diameter mm	Limit deviations mm	Tensile strength Rm N/mm <sup>2</sup>	Reduction in area Z %	No. of torsions min. L <sub>0</sub> 300 mm
2,50 – 2,70	± 0,025	2.100 – 2.220	45	5
> 2,70 – 3,20	± 0,030	2.100 – 2.220	45	5
> 3,20 – 4,00	± 0,030	2.080 – 2.200	45	4
> 4,00 – 4,50	± 0,035	2.060 – 2.170	40	4
> 4,50 – 4,70	± 0,035	2.060 – 2.170	40	3
> 4,70 – 6,00	± 0,035	2.050 – 2.160	40	3

- 1) The fracture surface of the sample tested on torsion must be perpendicular to the wire axis. No cracks must be visible on the fracture or on the surface of the sample.
- 2) The ovality, i.e. the difference between the minimum and maximum wire diameter measured in the same plane, shall not exceed 50% of the range given by the limit deviations.

Modulus of elasticity about 206 kN/mm<sup>2</sup>

Modulus of rigidity about 79,5 kN/mm<sup>2</sup>

### ***Surface quality:***

The surface condition „Röslau R20 FD“ is tested by means of an inspection of both coils ends. The test pieces are checked for surface defects after deep etching and microscopically for decarburization.

When testing the coil ends the maximum depth of surface defects and decarburization is 1,5% of the wire diameter. Connected carbon-free areas are not permissible.

### ***Form supplied and condition supplied:***

This material is usually supplied in catch weight coils or on carriers.  
Detailed coil diameters and coil weights are indicated in a separate sheet.  
Packing acc. to customers' request.

### ***Recommendation for processing:***

Immediately upon coiling the springs must be tempered at abt. 420°C for 30 minutes at least. After shot peening the springs must be tempered at abt. 250°C for 30 minutes.

In order to achieve an optimal fatigue resistance, the size of the shots and the time of shot peening must be adjusted in such a manner that the inner sides, too, are covered completely. The size of the shots must be adapted to the wire size, the pitch of the spring and the equipment used.

During loading, storing or processing the wire shall be suitably protected against corrosion and mechanical damage.

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