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Information about strength class 5.8

using 11SMnPb30C / 11SMn30C

Approach:

Contrary to previous norm regulations, it is not possible anymore to make a general commitment regarding the adherence of the strength class 5.8 when using the following free cutting steel

11SMnPb30C material 1.0718
11SMn30C material 1.0715

Reason:

The definition of the strength class 5.8 is as follows

5 = tensile strength of nominal value 500 N/mm^2
8 = elastic limit of 400 N/mm^2

(see DIN EN ISO 898-1, Edition November 1999, Table 3, p.7).

Free cutting steel 11SMnPb30C/11SMn30C

According to EN 10277-3, edition 1999, table 3, p. 5 the tensile strength changes with a growing diameter for cold drawn material (+C = cold drawn) as follows:

material-ø	tensile strength Rm N/mm^2
5 – 10	510 – 810
10 – 16	490 - 760
16 – 40	460 – 710
40 – 63	400 - 650

Normally, the employed material corresponds the tensile strength of 500 N/mm^2, thus the strength class of 5.8.
With an increasing diameter the risk increases that when utilizing the lower tolerance limit a tensile strength of 500 N/mm^2 will be exceeded.

No strength is specified in the corresponding norms for the production of plugs and similar turning parts but the type of material utilized, e.g. 11SMnPb30C. (compare DIN 906/908/909/910/7604)

Technically, it does not make sense to specify a **tensile** strength on a plug, which is imposed to **pressure**.

Conclusion:

The steel 11SMnPb30C/ 11SMn30C accomplishes the mechanical characteristics required for plugs.

It is utilized exclusively by all well-known hydraulic manufacturers for plugs.

For these applications, it can be refrained from using strength class 5.8.

Contact:

For further questions regarding the strength class 5.8, please do not hesitate to contact **Mrs. Hiltrud Heinrichs,** our quality management rep.

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