

INTRODUCTION

The AISI Steel Bar Product Guidelines is the successor to the former Steel Products Manual. It is designed to improve the understanding of steel bar products and may be used as a reference, an educational document and a steel ordering guideline.

All of the topics covered in the Guidelines are pertinent to the ordering of steel bars. However, it is only a guideline, and we stress the importance of contacting the steel bar

producer to discuss the technical details of the product being used for the design and manufacture of the end product. This is particularly important considering the sophisticated processing techniques utilized by both the steel producer and end user. It is in everyone's interest, from steel producer to product designer, purchaser and manufacturer, that the proper steel and processing be specified and ordered.

STEEL BAR ORDERING CHECKLIST

The Steel Bar Ordering Checklist is a new feature of the product Guidelines.

The ordering of steel bar products can be an involved process. A systematic checklist will help to assure that all important areas are considered when the customer puts an inquiry or order together. Designers and specifiers can also gain an appreciation of bar products by reviewing a checklist.

The accompanying forms may be used as formal checklists for an inquiry or order. One form is applicable to hot roll bar product, and the second form is intended for cold finished bar product. The ordering checklists may not be complete or applicable in

every situation, but they cover the majority of orders placed with steel bar producers. Report section heading references are provided on the checklists directing the user to further information contained in the Guidelines text.

It should be emphasized that even with the ordering checklists, users and customers should discuss their requirements with the steel producer's technical representative. This is particularly important when considering a new bar product or a product intended for a new end use. This will assure the optimum match of bar product and processing for the end use application.

HOT ROLLED STEEL BAR ORDERING CHECKLIST

Grade. The SAE or ASTM grade designation should be used. If the grade is a customer specified designation, it should be listed next to the grade. If the grade is a modification of a standard SAE or ASTM grade, the SAE or ASTM term designation should not be used, but should be specified as Grade _ followed by the word modification (that is, Grade 1045 Mod).

Chemistry. This section should be used for non-standard grades. For customer specified grades, all elements should be detailed with appropriate ranges (minimum and/or maximum). If the grade is a modification of an SAE or ASTM grade, only those elements modified from the standard need be detailed.

Shape. Define the desired bar shape.

Size. Specify cross section dimension(s).

Tolerance. What tolerance is required for the product?

Straight Bar. Show an ordered length. Are

spread or random lengths acceptable and what minimum/maximum is permitted? If the purchaser plans to cut the order length into smaller lengths (mults), include a cutting allowance in the order length. Can short lengths be included in a bundle or must they be bundled separately?

Coil. For the ordering of coil product, show the required dimensions (OD, ID, height and weight of the coil). Are the coils to be cleaned (surface scale removed by pickling) and coated (lime, zinc phosphate lube or other)?

Austenitic Grain Size. State whether fine or coarse grain is desired. Consult with the producer for details of the grain size control practice.

Quality Designation. Show the quality name of the material. Merchant quality, special quality (for carbon steel) and regular quality (for alloy steel) are the most common designations. Other quality levels are shown in the checklist. In the case of magnaflux quality, the frequency and severity specifications should be specified.