

HSS

ARTICLE

ROUND HSS AVAILABILITY

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There are two issues concerning availability that have me concerned and should be addressed.

ROUND HSS

Round HSS shapes in a variety of sizes are widely available. A500 rounds should be specified for structural applications, not A53. For more information, click here to read the article, "[A500 Versus A53: Different From The Inside Out](#)".

Picking a size that is widely produced is a little bit trickier. You may have noticed that there are hundreds of round HSS sizes listed in the software and manuals we use for design, although not all sizes are domestically produced. Rule of thumb – stick to the standard pipe outside diameter (OD) sizes. If deviating from those, check the capability tool to see if the section you are specifying is being domestically produced. [Click here](#) to find our capability tool.

Table 1 provides a quick cheat sheet for you.

HANDRAILS

Another common question is about the availability of round HSS for handrails. I've heard it all! Table 2 shows the sections commonly available in ASTM A500 for handrail construction.

If you were used to designing with the "1/3 stress increase" previously allowed in the building codes, using A500 Grade C will allow you use to the same sections as you were when specifying A53 with the stress increase.

I am often asked if A513 can be substituted because "A500 is not available". First, I would challenge the availability. I'm happy to help on that front. Second, the answer is "it depends". ASTM A513 is a mechanical tubing specification intended for applications where dimensional tolerances are very important, but the strength of the member is not paramount. ASTM A513 has no physical requirements (minimum yield, tensile or elongation), and often A513 material may not be provided with a Material Test Report (MTR) indicating these properties. Therefore, if you are going to allow a substitution, it's important you first perform coupon testing or review the product's MTR to ensure that it meets the physical requirements you assumed in your design.

ASTM A500 GRADE C AVAILABILITY

Hopefully you are up to speed with the Grade B versus Grade C smackdown. If not, here are the cliff notes: You need to specify Grade C! Our producers dual certify everything, and they have been doing it for the last 15+ years. Recently the AISC 15th Edition Steel Construction Manual was released. In it, you will notice the capacity tables are calculated for Grade C to reflect this as the predominant material in the marketplace.

For some reason, maybe just because of the perceived change, there have been several recent inquiries surmising that neither Grade B or C are available domestically. This is not true. The market has not changed and sizes you have been specifying all along are still available in A500 Grade C.

CONTACT US

If you have any issues with sourcing any HSS material, we are happy to help. [Click here](#) to contact us through the website and we will be happy to assist you!

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Widely Available Round HSS			
HSS3.5	x0.188	HSS6.625	x0.188
	x0.216		x0.250
	x0.250		x0.280
	x0.313		x0.312
HSS4	x0.188		x0.375
	x0.226		x0.432
	x0.237		x0.500
	x0.250	HSS8.625	x0.188
	x0.318		x0.250
HSS4.5	x0.188		x0.322
	x0.237		x0.375
	x0.250		x0.500
	x0.313	HSS10.75	x0.250
	x0.337		x0.366
	x0.375		x0.500
HSS5	x0.188	HSS12.75	x0.250
	x0.250		x0.375
	x0.375		x0.406
HSS5.563	x0.188		x0.500
	x0.258		x0.625
	x0.375		

Table 1: Widely available round HSS

Handrails	
HSS1.9	x0.180
	x0.145
	x0.125
HSS1.66	x0.140
	x0.134
	x0.125
HSS1.315	x0.133
	x0.125

Table 2: Handrails

