HISTORY OF STEEL GRADES USED IN JOIST AND JOIST GIRDER FABRICATION: FROM 1961 TILL TODAY

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SUMMARY

Information on steel grades compiled since 1961 and those used in our plants.

HISTORY OF STEEL GRADES USED IN JOIST AND JOIST GIRDER FABRICATION

In the March 2008 Canam InfoTech article entitled Field measurement for existing joists requiring reinforcement, we discussed the various criteria required to produce detailed field measurements for existing joists when the original design documents are no longer available. One of these criteria is the steel grade.

This article summarizes all of the information Canam has gathered on steel grades since 1961, the year we started fabricating joists in our St. Gédéon, QC plant. The information also pertains to the steel grades used in our Mississauga, ON and Calgary, AB plants. Please note that the steel grades used in our three plants have remained unchanged since 1992.

CANAM'S HISTORY OF STEEL GRADES

YEAR	DESCRIPTION
1961	Start of production at the St. Gédéon plant (Quebec) • Steel A6 • Fy = 36 ksi
1970	• Round bar: Fy = 44 ksi (equivalent to G40.21 44W steel) • Coils used for cold-formed angles: Fy = 50 ksi (equivalent to G40.21 50W steel) • Hot-rolled angles: Fy = 50 ksi (equivalent to G40.21 50W steel)
1974	• Introduction of cold-formed U-shaped sections • Thickness of 0.090" and 0.118"
1975	• Higher steel grades for angles and U-shaped sections • Hot-rolled angles: Fy = 55 ksi when < 4" otherwise Fy= 44 ksi • Cold-formed angles and U-shaped sections (ASTM A607 Grade 50): Fy = 50 ksi • Round bar: Fy = 44 ksi (equivalent to G40.21 44W steel)
1978	New coil thicknesses: 0.157", 0.197" and 0.236"
1984	Start of production at the Mississauga plant (Ontario)
1984-1987	**Mississauga only:** • Hot-rolled angles: Fy = 50 ksi when < 4" otherwise Fy= 44 ksi • Round bar: Fy = 44 ksi

May 1987	**St. Gédéon and Mississauga only:** • Higher steel grade for round bar: Fy = 50 ksi (equivalent to G40.21 50W steel) **Mississauga only:** • Higher steel grade for hot-rolled angles: Fy = 55 ksi when < 4" otherwise Fy= 44 ksi
May 1992	**St. Gédéon and Mississauga only:** • Higher steel grades for cold-formed angles and U-shaped sections (ASTM A607 Grade 55): Fy = 55 ksi
1996	Start of production at the Calgary plant (Alberta) • Since May 1992, the steel grades used in our three plants have remained unchanged

REFERENCES

- Handbook of Steel Construction, Thenth Edition, Structural Steels-Historical Remarks, p.6-4
- When confronted with an unidentified structural steel, Clause 5.2.2 of CSA-S16-01 requires that Fy be taken as 210 MPa and Fu as 380 MPa

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