

Acceptable Steels

Historically, SDI has stated that steel shall conform to ASTM designation A1008 for cold-rolled products (painted or non-galvanized) or A653 for galvanized products. The discontinued predecessors of these ASTM specifications, e.g. A245, A611 and A446, were noted in earlier SDI publications. The AISI Standard, “North American Specification for the Design of Cold-Formed Steel Structural Members”, governs the structural design of steel roof deck, composite steel floor deck, and non-composite steel form deck. Other structural steels (SS) or high-strength low-alloy steels (HSLAS or HSLAS-F) listed in Section A2.1 of the AISI Standard’s 2001 Edition are permitted in the manufacture of decking products. The 2004 Supplement to the AISI Standard applies. The following also apply:

1. The acceptable steel grades are limited in the Section A2.1 table.
2. Ductility limits (AISI Section A2.3) apply when specifying structural steel not listed in Section A2.1.
3. The use of Grade 80 steel conforming to ASTM A653, A1008, A792, and A875 and other steels is permitted in roof and floor decking (AISI Section A2.3.2). Certain design restrictions apply to all decking and particularly to composite floor deck.
4. Consider the suitability of metallic finishes for the particular decking application. As an example, SDI does not recommend aluminized steels or aluminum-zinc alloy coated steels in composite floor deck and some fire rating applications require galvanized steel. *(These examples would preclude A792 and A875 in floor deck; however, these same steels may be suitable in roof deck applications.)*
5. Limit design to the specified and ordered minimum yield strength and not that indicated by mill reports.
6. The design thickness limit is specified in the SDI Design Manual and the AISI Standard (Section A2.4).

Reference Documents:

1. SDI “Steel Deck Design Manual”, Publication 30 — SDI Specification and Commentary Section 2.1
2. AISI Standard, “North American Specification for the Design of Cold-Formed Steel Structural Members”, 2001 Edition including 2004 Supplement
 - Section A2.1 Applicable Steels
 - Section A2.2 Other Steels (See 2004 Supplement Appendix A.)
 - Section A2.3 Ductility *(Note the composite deck restriction.)*