

A572/A572M-04

Chemical Requirements (Heat Analysis)

| Diameter, Thickness, or<br>Distance Between Parallel<br>Faces, in. [mm]<br>Plates and Bars | Structural<br>Shape Flange<br>or Leg<br>Thickness,<br>in. [mm] | Grade    | Carbon, max,<br>% | Manganese,<br>max, % | Phosphorus,<br>max, % | Sulfur, max,<br>% | Silicon   |   |
|--|--|----------|-------------------|----------------------|-----------------------|-------------------|---|---|
|  |  |          |                   |                      |                       |                   | Plates to 3/2<br>in. [40mm]<br>Thick,<br>Shapes with<br>Flange or<br>Leg<br>Thickness to<br>3 in. [75mm]<br>inclusive,<br>Sheet Piling,<br>Bars, Zee,<br>and Rolled<br>Tees | Plates Over 3/2 in.<br>[40mm] Thick and<br>Shapes with Flange<br>Thickness Over 3 in.<br>[75mm] |
|  |  |          |                   |                      |                       |                   | Max, %  | Range, %  |
| 6 [150]  | All  | 42 [290] | 0.21              | 1.35                 | 0.04                  | 0.05              | 0.40  | 0.15-0.40   |
| 4 [100]  | All  | 50 [345] | 0.23              | 1.35                 | 0.04                  | 0.05              | 0.40  | 0.15-0.40   |
| 2 [50]   | All  | 55 [380] | 0.25              | 1.35                 | 0.04                  | 0.05              | 0.40  | 0.15-0.40   |
| 5/4 [32]   | ≤ 2 [50]   | 60 [415] | 0.26              | 1.35                 | 0.04                  | 0.05              | 0.40  | -   |
| > 1/2 – 5/4 [13-32]  | > 1-2 [25-50]  | 65 [450] | 0.23              | 1.65                 | 0.04                  | 0.05              | 0.40  | -   |
| ≤ 1/2 [13]   | ≤ 1  | 65 [450] | 0.26              | 1.35                 | 0.04                  | 0.05              | 0.40  | -   |

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Alloy Content

| Type | Element                 | Heat Analysis, % |
|------|-------------------------|------------------|
| 1    | Columbium               | 0.005-0.05       |
| 2    | Vanadium                | 0.01-0.15        |
| 3    | Columbium               | 0.005-0.05       |
|      | Vanadium                | 0.01-0.15        |
|      | Columbium plus vanadium | 0.02-0.15        |
| 5    | Titanium                | 0.006-0.04       |
|      | Nitrogen                | 0.003-0.015      |
|      | Vanadium                | 0.06 max         |

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Tensile Requirements

| Grade    | Yield Point, min |       | Tensile Strength, min |       | Minimum Elongation, % |                 |
|----------|------------------|-------|-----------------------|-------|-----------------------|-----------------|
|          | ksi              | [MPa] | ksi                   | [MPa] | In 8 in. [200mm]      | In 2 in. [50mm] |
| 42 [290] | 42               | [290] | 60                    | [415] | 20                    | 24              |
| 50 [345] | 50               | [345] | 65                    | [450] | 18                    | 21              |
| 55 [380] | 55               | [380] | 70                    | [485] | 17                    | 20              |
| 60 [415] | 60               | [415] | 75                    | [520] | 16                    | 18              |
| 65 [450] | 65               | [450] | 80                    | [550] | 15                    | 17              |