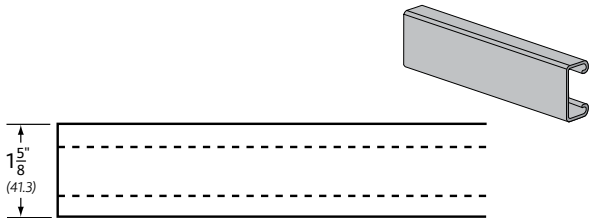
Engineered Solutions

# Channel
# Figs. AS 400, AS 400EH, AS 400KO, AS 400S

☐ **AS 400** ☐ PL, ☐ GR, ☐ PG, ☐ Other

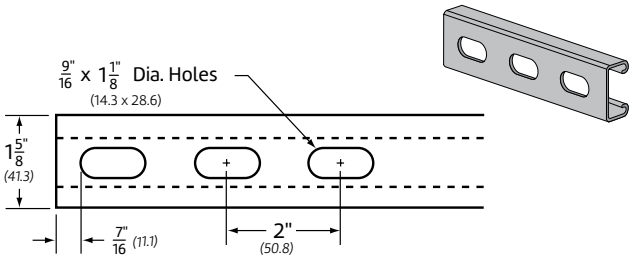
**Solid**




Wt/100 Ft: 149 Lbs

☐ **AS 400EH** ☐ PL, ☐ GR, ☐ PG, ☐ Other

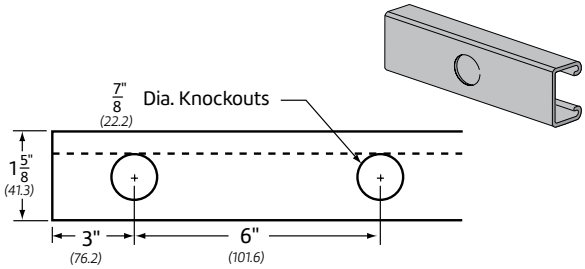
**with Elongated Holes**




Wt/100 Ft: 144 Lbs

☐ **AS 400KO** ☐ PL, ☐ GR, ☐ PG, ☐ Other

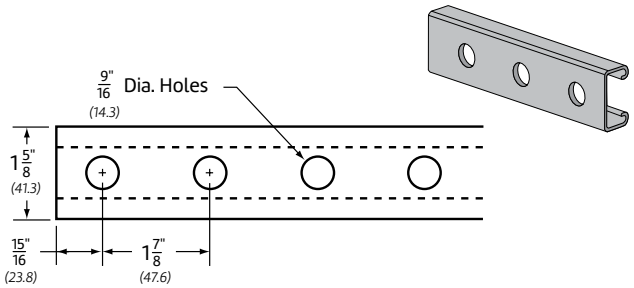
**with Knock Out**




Wt/100 Ft: 149 Lbs

☐ **AS 400H** ☐ PL, ☐ GR, ☐ PG, ☐ Other

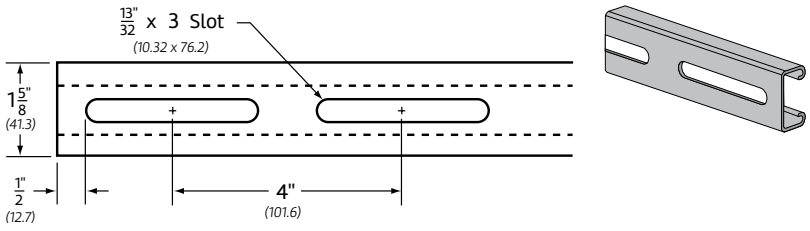
**with Holes**




Wt/100 Ft: 144 Lbs

☐ **AS 400S** ☐ PL, ☐ GR, ☐ PG, ☐ Other

**with Long Slots**



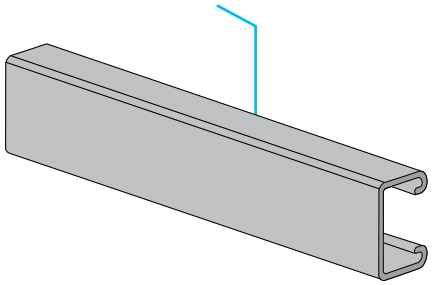

Wt/100 Ft: 134 Lbs

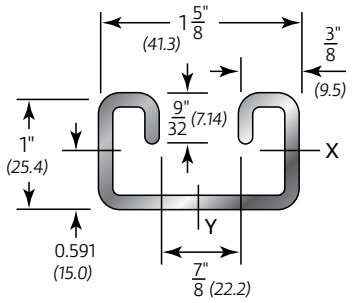
**LEGEND:**

**GR:** Powder Coated Supr-Green **EG:** Electro-Galvanized **PG:** Pre-Galvanized **AL:** Aluminum **HG:** Hot Dipped Galvanized **PL:** Plain **SS:** Stainless Steel **ZTC:** Zinc Trivalent Chromium Stainless Steel **(SS)**, Zinc Trivalent Chromium **(ZTC)** and Hot Dipped Galvanized **(HG)** are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.

| PROJECT INFORMATION | APPROVAL STAMP |
|---|---|
| Project: | ☐ Approved |
| Address: | ☐ Approved as noted |
| Contractor: | ☐ Not approved |
| Engineer: | Remarks: |
| Submittal Date: | |
| Notes 1: | |
| Notes 2: | |

# Channel
## Figs. AS 400, AS 400EH, AS 400KO, AS 400S






1" x 1⅝" (25.4 x 41.3mm)

12 Gauge Channel • wt./100 ft. – 149#

Stocked in pre-galvanized, plain & powder coated Supr-Green, in both 10 & 20 ft. lengths. Other materials, finishes & lengths are available upon request.

### Properties of Section

| Catalog No. | Wt./Ft. | | Area of Section | | X-X Axis | | | | | | Y-Y Axis | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lbs. | Kg | Sq. In. | Sq. CM | I in⁴ | I cm⁴ | S in³ | S cm³ | r in. | r cm | I in⁴ | I cm⁴ | S in³ | S cm³ | r in. | r cm |
| AS 400 | 1.49 | 2.2 | 0.423 | 2.729 | 0.055 | 2.289 | 0.095 | 1.557 | 0.361 | 0.917 | 0.162 | 6.743 | 0.199 | 3.261 | 0.619 | 1.572 |

I = Moment of Inertia  S = Section Modulus  r = Radius of Gyration

### Beam & Column Loads

| Span or Unbraced Height | Static Beam Load (X-X Axis) | | | | | | Max. Allowable Load at Slot Face | Column Loading Data | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Allowable Uniform Load | Deflection at Uniform Load | Uniform Load at Deflection | | | | | Max. Column Load Applied at C.G. | | | |
| | | | Span/180 Deflection | Span/240 Deflection | Span/360 Deflection | Weight of Channel | | k=.65 | k=.80 | k=1.0 | k=1.2 |
| In | Lbs | In | Lbs | Lbs | Lbs | Lbs | Lbs | Lbs | Lbs | Lbs | Lbs |
| 12 | 1,600 | 0.02 | 1,600 | 1,600 | 1,600 | 1.5 | 2,790 | 9,290 | 9,050 | 8,700 | 8,350 |
| 18 | 1,070 | 0.05 | 1,070 | 1,070 | 1,070 | 2.2 | 2,660 | 8,740 | 8,350 | 7,860 | 7,430 |
| 24 | 800 | 0.09 | 800 | 800 | 600 | 3.0 | 2,500 | 8,180 | 7,710 | 7,190 | 6,710 |
| 30 | 640 | 0.14 | 640 | 580 | 380 | 3.7 | 2,350 | 7,670 | 7,190 | 6,500 | 5,410 |
| 36 | 530 | 0.20 | 530 | 400 | 270 | 4.5 | 2,190 | 7,240 | 6,710 | 5,410 | 4,150 |
| 42 | 460 | 0.27 | 390 | 290 | 200 | 5.2 | 2,000 | 6,900 | 5,840 | 4,350 | 3,070 |
| 48 | 400 | 0.36 | 300 | 230 | 150 | 6.0 | 1,810 | 6,280 | 4,980 | 3,390 | 2,350 |
| 60 | 320 | 0.56 | 190 | 140 | 100 | 7.5 | 1,440 | 4,870 | 3,390 | 2,170 | 1,510 |
| 72 | 270 | 0.80 | 130 | 100 | 70 | 8.9 | 1,150 | 3,560 | 2,350 | 1,510 | ** |
| 84 | 230 | 1.09 | 100 | 70 | 50 | 10.4 | 940 | 2,620 | 1,730 | ** | ** |
| 96 | 200 | 1.42 | 80 | 60 | 40 | 11.9 | ** | 2,000 | ** | ** | ** |
| 108 | 180 | 1.80 | 60 | 40 | 30 | 13.4 | ** | 1,580 | ** | ** | ** |
| 120 | 160 | 2.22 | 50 | 40 | 20 | 14.9 | ** | ** | ** | ** | ** |
| 144 | 130 | 3.20 | 30 | 30 | 20 | 17.9 | ** | ** | ** | ** | ** |
| 168 | 110 | 4.35 | NR | NR | NR | 20.9 | ** | ** | ** | ** | ** |
| 180 | 110 | 5.00 | NR | NR | NR | 22.4 | ** | ** | ** | ** | ** |
| 192 | 100 | 5.68 | NR | NR | NR | 23.8 | ** | ** | ** | ** | ** |
| 216 | 90 | 7.19 | NR | NR | NR | 26.8 | ** | ** | ** | ** | ** |
| 240 | 80 | 8.88 | NR | NR | NR | 29.8 | ** | ** | ** | ** | ** |

# Bearing Load may limit load
** Not recommended – KL/r exceeds 200

**Notes:**

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Allowable beam loads are based on a uniformly loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply by the following:
   EH by 88%, S by 90%,
   H (9/16 holes) by 88%, KO by 82% .
4. Refer to the Anvil-Strut Catalog for reduction factors for unbraced lengths.

ANVIL-STRUT
An ASC Engineered Solution

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## Beam & Column Loads – Metric

| Span or Unbraced Height | Static Beam Load (X-X Axis) | | | | | | Max. Allowable Load at Slot Face | Column Loading Data | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Allowable Uniform Load | Deflection at Uniform Load | Uniform Load at Deflection | | | | | Max. Column Load Applied at C.G. | | | |
| | | | Span/180 Deflection | Span/240 Deflection | Span/360 Deflection | Weight of Channel | | k=.65 | k=.80 | k=1.0 | k=1.2 |
| mm | Kn | mm | Kn | Kn | Kn | Kg | Kn | Kn | Kn | Kn | Kn |
| 305 | 7.1 | 0.5 | 7.1 | 7.1 | 7.1 | 0.7 | 12.4 | 41.3 | 40.3 | 38.7 | 37.1 |
| 457 | 4.8 | 1.3 | 4.8 | 4.8 | 4.8 | 1.0 | 11.8 | 38.9 | 37.1 | 35.0 | 33.1 |
| 610 | 3.6 | 2.3 | 3.6 | 3.6 | 2.7 | 1.4 | 11.1 | 36.4 | 34.3 | 32.0 | 29.8 |
| 762 | 2.8 | 3.6 | 2.8 | 2.6 | 1.7 | 1.7 | 10.5 | 34.1 | 32.0 | 28.9 | 24.1 |
| 914 | 2.4 | 5.1 | 2.4 | 1.8 | 1.2 | 2.0 | 9.7 | 32.2 | 29.8 | 24.1 | 18.5 |
| 1,067 | 2.0 | 6.9 | 1.7 | 1.3 | 0.9 | 2.4 | 8.9 | 30.7 | 26.0 | 19.3 | 13.7 |
| 1,219 | 1.8 | 9.1 | 1.3 | 1.0 | 0.7 | 2.7 | 8.1 | 27.9 | 22.2 | 15.1 | 10.5 |
| 1,524 | 1.4 | 14.2 | 0.8 | 0.6 | 0.4 | 3.4 | 6.4 | 21.7 | 15.1 | 9.7 | 6.7 |
| 1,829 | 1.2 | 20.3 | 0.6 | 0.4 | 0.3 | 4.0 | 5.1 | 15.8 | 10.5 | 6.7 | ** |
| 2,134 | 1.0 | 27.7 | 0.4 | 0.3 | 0.2 | 4.7 | 4.2 | 11.7 | 7.7 | ** | ** |
| 2,438 | 0.9 | 36.1 | 0.4 | 0.3 | 0.2 | 5.4 | ** | 8.9 | ** | ** | ** |
| 2,743 | 0.8 | 45.7 | 0.3 | 0.2 | 0.1 | 6.1 | ** | 7.0 | ** | ** | ** |
| 3,048 | 0.7 | 56.4 | 0.2 | 0.2 | 0.1 | 6.8 | ** | ** | ** | ** | ** |
| 3,658 | 0.6 | 81.3 | 0.1 | 0.1 | 0.1 | 8.1 | ** | ** | ** | ** | ** |
| 4,267 | 0.5 | 110.5 | NR | NR | NR | 9.5 | ** | ** | ** | ** | ** |
| 4,572 | 0.5 | 127.0 | NR | NR | NR | 10.2 | ** | ** | ** | ** | ** |
| 4,877 | 0.4 | 144.3 | NR | NR | NR | 10.8 | ** | ** | ** | ** | ** |
| 5,486 | 0.4 | 182.6 | NR | NR | NR | 12.2 | ** | ** | ** | ** | ** |
| 6,096 | 0.4 | 225.6 | NR | NR | NR | 13.5 | ** | ** | ** | ** | ** |

## Channel Specifications

### Materials

#### Carbon Steel

Channels are formed from high-quality, structural grade carbon steel which has been manufactured in accordance with ASTM A-1011-04-SS Grade 33 (hot rolled), or ASTM 366 (cold rolled), with mechanical properties of 33 ksi minimum yield and 52 ksi minimum tensile strength. The precision roll-forming process by which the channels are formed "cold works" the steel, thereby increasing its mechanical properties.

#### Stainless Steel

Channels are formed from chromium-nickel stainless steel sheet manufactured in accordance with ASTM A-240 specification, offered in both AISI Type 304 and 316 material to provide protection in varying corrosive conditions.

#### Aluminum

Extruded aluminum channel is produced from 6063-T6 alloy, and fittings are produced from 5052-H32 alloy, both in accordance with ASTM B-221 specifications. Aluminum is suitable for use in various corrosive environments.

### Finishes

#### Pre-Galvanized

Hot dip, mill galvanized coating produced through a process of continuously passing the steel through a bath of molten zinc. This process is performed in accordance with ASTM A-653. The thickness of the zinc coating conforms with ASTM G-90 which represents a coating thickness of .90 ounces of zinc per square foot. This coating is applied to the steel master coils prior to slitting and fabrication.

#### Hot Dip Galvanized – Post Fabrication

The finished channel is completely immersed in a bath of molten zinc, resulting in the complete coating of all surfaces of the product, including edges and welds. Strut channels that are hot dip galvanized, have a total coating weight of 3.0 ounces of zinc per square foot in accordance with ASTM A-123 specification. This coating provides superior results in applications calling for prolonged outdoor exposure.

#### Supr-Green Powder Coating

Strut channels are coated after fabrication with polyester powder finish. This coating is applied using an electrostatic spray process, beginning with cleaning and phosphating, through a bonderite pretreatment process, and ending with oven curing. The resulting finish provides a high quality appearance and durability. Powder Coating is in accordance with ASTM B-117 (standard practice for operating salt spray [fog] apparatus) to 500 hours with less than $\frac{1}{8}$" scribe creep.

#### Zinc Trivalent Chromium

The finished channel undergoes a multi-step process consisting of electrogalvanizing, in accordance with ASTM B-633-85, followed by an application of zinc trivalent chromium, which provides the distinctive gold coloration of the finish. All surfaces are coated because the process is performed after fabrication.

#### PVC

A corrosive resistant PVC (polyvinyl chloride) coating is applied over the completed strut channel. The coating process consists of surface pretreatment, followed by preheating of the part, which is then passed through a fluidized bed of vinyl plastic powder. The powder melts onto the heated channel forming a smooth coating which undergoes a final heat curing.