

### For uncompromising quality and packaging effectiveness

Consistent high quality makes Signode steel strapping the first choice among packaging professionals worldwide. Purchasing professionals also prefer Signode strapping because it is made to the most exacting tolerances, so it goes further and reduces their strapping costs.

#### Types, sizes and finishes for all demanding applications

Signode offers two basic types of steel strapping: Apex and Magnus. Each is specially formulated to meet the demands of a particular range of applications. And for each strapping type, there is a selection of sizes and finishes which matches the specific requirements of those applications.

#### Apex strapping

A cold-rolled, low carbon steel strapping. Manufactured with superior edge conditioning and coating.

#### Magnus. strapping

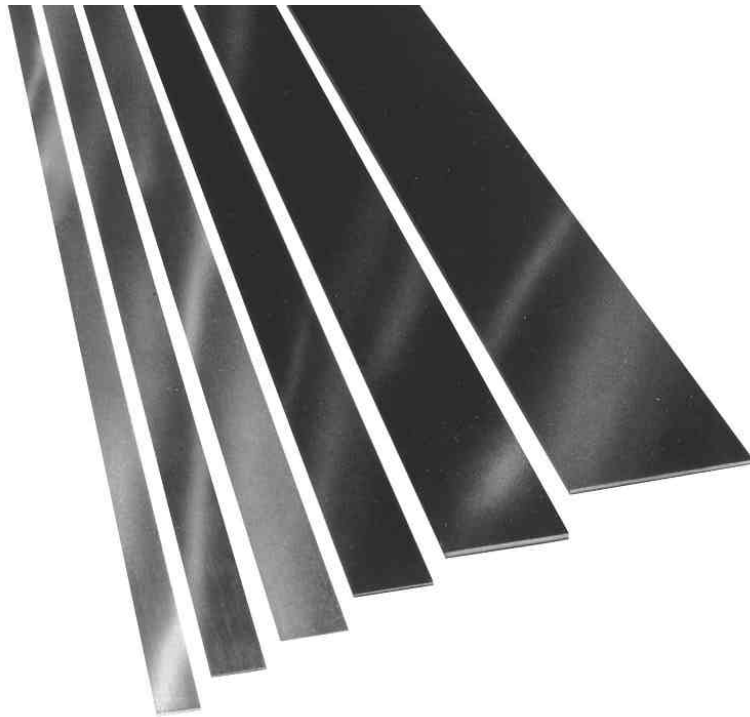
A cold-rolled, medium carbon steel strapping. Heat-treated with a Signode process that combines fine surface and controlled physical properties with high strength and excellent shock resistance.

#### Standard strap finishes

Signode produces two different steel strapping finishes. Each is tailored to the requirements of particular tensioning methods, sealing devices, and packaging applications

#### Painted and waxed

Painted and waxed strapping provides corrosion resistance. Available in all Apex and Magnus strap sizes, it can be used in notch or crimp-type seal systems. Its primary advantage is improved tension transmission around load corners.



Sizes from 9.5mm to 31.75mm

Waxed strapping is required for feedwheel-type tensioners.

#### Zinc painted and waxed

Zinc finish strapping is waxed and has a zinc enriched coating to provide outstanding resistance to rust. Available in a variety of Apex and Magnus sizes, it has the same improved tension transmission characteristics as the painted and waxed strapping. Zinc finish protects where it is needed most—at points of surface damage and scratches.



Signode steel strapping and plywood can be combined to fabricate 300 gal. (1140 l) storage containers used to store and ship a myriad of industrial products.

Note: Signode steel strapping plants are ISO-9000 certified.

**Steel strap packaging****Coil winding**

Signode strapping is produced in two basic coil windings:

**Mill wound**

The strapping is oscillated uniformly and tightly across the 63.5 mm width of the coil.

**Ribbon wound**

Each layer is wound directly over the one below it so that the width of the strapping is the width of the coil.



Mill wound

Ribbon wound



Ribbon wound skid

**Standard multi-coil skids**

Twelve mill wound coils make up a standard skid. The number of ribbon wound coils will vary depending on the width of the strapping.

**Large coils**

1-1/4" x 0.031" (31.75 x 0.8 mm) painted and waxed Magnus is available in a 220kg coil. Other Apex or Magnus sizes can be produced in 200kg or larger coils on a special manufacture basis. Contact your Signode sales representative for details.



Mill wound skid

**Coil sizes**

**Inside diameter:** 406.4 mm

**Outside diameter:** Mill wound coils measure 584.2 mm (23"). Ribbon wound coils vary from 596.9 mm to 685.8 mm (23-1/2" to 27") depending on strap size.

## Strap Information

|                  |                |                   |       |       |       |       |       |       |       |      |
|------------------|----------------|-------------------|-------|-------|-------|-------|-------|-------|-------|------|
| MAGNUS STRAPPING | Width          | mm                |       |       |       | 12.7  |       |       | 16    | 16   |
|                  | Thickness      | mm                |       |       |       | 0.50  |       |       | 0.50  | 0.60 |
|                  | XSA            | mm <sup>2</sup>   |       |       |       | 6.35  |       |       | 8.0   | 9.6  |
|                  | Break Strength | Newtons           |       |       |       | 6500  |       |       | 8200  | 9800 |
|                  | Tensile        | N/mm <sup>2</sup> |       |       |       | 1024  |       |       | 1025  | 1021 |
|                  | Yield          | m/kg              |       |       |       | 20.2  |       |       | 16.0  | 13.3 |
| APEX STRAPPING   | Width          | mm                | 9.5   | 9.5   | 12.7  | 12.7  | 12.7  | 16    | 16    | 16   |
|                  | Thickness      | mm                | 0.38  | 0.50  | 0.38  | 0.50  | 0.60  | 0.38  | 0.50  | 0.60 |
|                  | XSA            | mm <sup>2</sup>   | 3.61  | 4.75  | 4.826 | 6.35  | 7.62  | 6.08  | 8     | 9.6  |
|                  | Break Strength | Newtons           | 3600  | 4400  | 4900  | 5700  | 6700  | 6000  | 7300  | 8400 |
|                  | Tensile        | N/mm <sup>2</sup> | 997   | 926   | 1015  | 898   | 879   | 987   | 913   | 875  |
|                  | Yield          | m/kg              | 35.5  | 27.0  | 26.5  | 20.2  | 16.8  | 21.1  | 16.0  | 13.3 |
| MAGNUS STRAPPING | Width          | mm                | 19    |       | 19    | 19    | 19    | 19    | 19    |      |
|                  | Thickness      | mm                | 0.50  |       | 0.60  | 0.63  | 0.70  | 0.80  | 0.90  |      |
|                  | XSA            | mm <sup>2</sup>   | 9.5   |       | 11.4  | 12.0  | 13.3  | 15.2  | 17.1  |      |
|                  | Break Strength | Newtons           | 9700  |       | 12200 | 12300 | 14200 | 15500 | 17200 |      |
|                  | Tensile        | N/mm <sup>2</sup> | 1021  |       | 1070  | 1028  | 1068  | 1020  | 1006  |      |
|                  | Yield          | m/kg              | 13.5  |       | 11.2  | 10.7  | 9.6   | 8.4   | 7.5   |      |
| APEX STRAPPING   | Width          | mm                | 19    | 19    | 19    |       | 19    | 19    | 19    |      |
|                  | Thickness      | mm                | 0.40  | 0.50  | 0.60  |       | 0.70  | 0.80  | 0.90  |      |
|                  | XSA            | mm <sup>2</sup>   | 7.6   | 9.5   | 11.4  |       | 13.3  | 15.2  | 17.1  |      |
|                  | Break Strength | Newtons           | 7100  | 8700  | 10000 |       | 11500 | 12700 | 14300 |      |
|                  | Tensile        | N/mm <sup>2</sup> | 934   | 916   | 877   |       | 865   | 836   | 836   |      |
|                  | Yield          | m/kg              | 16.8  | 13.5  | 11.2  |       | 9.6   | 8.4   | 7.5   |      |
| MAGNUS STRAPPING | Width          | mm                | 25.4  |       | 31.75 | 31.75 |       | 31.75 | 31.75 |      |
|                  | Thickness      | mm                | 0.80  |       | 0.63  | 0.80  |       | 1.00  | 1.12  |      |
|                  | XSA            | mm <sup>2</sup>   | 20.3  |       | 20.0  | 25.4  |       | 31.8  | 35.6  |      |
|                  | Break Strength | Newtons           | 20700 |       | 20400 | 25400 |       | 32200 | 36500 |      |
|                  | Tensile        | N/mm <sup>2</sup> | 1019  |       | 1020  | 1000  |       | 1014  | 1026  |      |
|                  | Yield          | m/kg              | 6.3   |       | 6.4   | 5.0   |       | 4.0   | 3.6   |      |
| APEX STRAPPING   | Width          | mm                | 25.4  | 25.4  |       | 31.75 | 31.75 | 31.75 |       |      |
|                  | Thickness      | mm                | 0.80  | 1.00  |       | 0.80  | 0.90  | 1.00  |       |      |
|                  | XSA            | mm <sup>2</sup>   | 20.32 | 25.4  |       | 25.4  | 28.58 | 31.75 |       |      |
|                  | Break Strength | Newtons           | 17000 | 20300 |       | 20000 | 22300 | 25000 |       |      |
|                  | Tensile        | N/mm <sup>2</sup> | 837   | 799   |       | 787   | 780   | 787   |       |      |
|                  | Yield          | m/kg              | 6.3   | 5.0   |       | 5.0   | 4.5   | 4.0   |       |      |