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Cranston Specification #CS-003

Recommended Wire Specifications

SCOPE:

These details cover the normal recommended specifications for wire strapping with a twisted joint to be used in securing high density packages, bundles or bales in groups or units as used in a Cranston wire strapping machine of a specified model. Cranston machines and wire dispensing equipment are designed for this type of wire and coil.



TYPICAL CRANSTON TWISTED JOINT: 900 SERIES

WIRE TENSILE AND STRENGTH:

WIRE SIZES:

15 to 13-1/2 gauge

13-1/4 to 11 gauge

10-3/4 to 8 gauge

TENSILE STRENGTH:

130,000 to 160,000 psi

145,000 to 170,000 psi

150,000 to 175,000 psi

NOTES:

Another common strength specification is expressed in breaking strength.

Wire gauge based on American Steel & Wire Co. (Washburn & Moen).

ELONGATION:

Minimum 7% in 10 inches

SIZE TOLERANCE:

The wire shall have a diameter tolerance of $\pm .002$ " for all sizes.

TORSIONAL STRENGTH:

The wire must have the ability to withstand at least 25 twisted turns in a wire length of 100 times the wire diameter without breaking.



COATING:

Hot dipped galvanized and pad wiped with approximately .2 oz. of zinc per square foot of wire surface. The coating must adhere to the wire so as not to peel when wrapped around its own diameter at least four times.

FINISH:

The wire may be coated with a 3% to 5% solution such as industrial compound No. 22 or Galvaseal "J". Other coatings such as wax, oil, etc. which may adversely affect the knot strength, wire feed or tension in the wire strapping machine, are not acceptable.

GENERAL QUALITY:

The wire shall have a uniform chemical composition free from undue segregation and inclusions. The wire shall be free of surface defects such as laps, seams, fins, roughness, etc. which may impair its use in Cranston's strapping machines.

NUMBER OF TESTS:

Testing must be in accordance with sound statistical quality control principles. In no case shall the number of tests be less than four selected from each ten tons of wire produced within a single lot.

COILING:

The wire should be coiled in the largest quantity deemed reasonable for shipping and handling purposes.

Normally a maximum of one wire splices per coil of wire will be accepted. Any welds must be of top quality, fully ground and dressed to wire size to assure proper strength and size to run through the strapping equipment. There shall be no loose ends in a coil except at the lead and tail ends. The wire must be coiled with forward or positive cast. To test this, a single wrap must be cut from the coil and suspended with the cut gap at the bottom. The amount of cast can be measured by lateral distance between the cut ends. This distance should be approximately 3". The wire is drawn from this coil from the top.

Wire must be coiled by drop cast coilers with the dead cast set approximately 8" larger than the core on which it is carried.



Coils should be cast on cores or stands having proper support for storage, shipping and dispensing.

Identification tags should be secured to the leading end of each coil. These tags should display wire gauge or size, tensile strength, coil weight, manufacturing date and the manufacturer's production lot identification number.

Each coil should be covered with poly film to shelter it from dust and moisture. The bottom of the package must be left open to provide adequate breathing.

STORAGE:

Wire must always be transported and stored in a covered area, kept dry and free of dust, oil and other contaminating atmospheres. Wire should be consumed as soon as possible. Recommended maximum storage is 60 to 90 days.

WIRE PACKAGING OR CORE DETAIL:

Typical pipe or tubular carriers are fabricated in various ways and the tops of the tubes are approximately 48" high for Cranston machines.

Outside diameters of coil should not exceed that of the base of the carrier on which it is carried. Either cardboard or plastic sleeves should be put over upright sections to prevent the wire from chafing against the core.

A distance of 10" to 12" must be maintained from the top of the free wire coil and the top of the carrier on which it is carried.

Cores must be made with adequate height and diameter to maintain proper coil retention and support when in a free stack (not banded or wrapped). The height must be appropriate for feeding into the strappers.

Coils should be compressed and bound or strapped in four places at 90° positions to prevent bounce, chafing or interleaving of wires during shipment.

As an alternate, coils may be on pallets with fiber cores, in which case the producer must assure and provide the packaging. Special dispensing cores must be used.

COIL WEIGHT:

Coil weight is approximately 1,800 lbs. (835 Kg) \pm 15%.

ILLUSTRATION OF TYPICAL WIRE COIL

