



EXTRA-FLEXIBLE BRAIDS 5/100 - 7/100

Conception and design

The extra-flexible braids in the INTERNATIONAL WIRE range are designed from assemblies of 0.05mm or 0.07mm wires.

The braids are available as pearled round braids, square braids or flat braids and can be produced in bare, tin-plated and silver-plated copper wire.

The choice of flat braids or round braids and that of wire diameter make it possible to define the best technical solution to suit the braid's operating conditions. This technical optimization ensures an optimum braid service life, thus limiting replacement or maintenance operations and reducing costs.

Applications

In installations in which the electrical connection is subjected to a considerable number of movements or operations like:

Carbon brushes for electric motors, starter motors.

In installations in which the electrical connection requires dynamic characteristics and fundamental flexibility for proper operation like circuit-breakers from 0 to 5000 A.

The range

- Standardized sections:
 - 0,5 mm² to 30 mm² en in round or square braids,
 - 5 mm² to 50 mm² in flat braids.
- Wire diameter: 0.05 mm & 0.07 mm.
- Finishes:
 - bare copper,
 - tin-plated copper,
 - silver-plated copper,
 - nickel-plated copper (only in 0.07mm dia. wire)

Option

- Oxygen-free copper – Cu-OF to EN 13602 – guaranteed oxygen content <10 PPM (as recommended in American standard ASTM B 170)

Benefits

INTERNATIONAL WIRE solution:

Our manufacturing facility, capable of producing any types of braids, enables us to provide our customers with the best value for money solution.

Our knowledge of the market, our experience and our laboratory give us the capabilities required to develop the accurate for every application.

TECHNICAL CHARACTERISTICS

WIRES

Copper classification	According to French Standard (NF) EN 13602 (NFC 31 111)	
	Designation	Cu-ETP
	Min. copper content	99.9 %
	Max. electrical resistivity at 20°C (annealed state)	1.7241 μΩ.cm (100%I ACS)
Copper spécification	Mechanical strength	200 mini Mpa
	Metallurgical state	Annealed (State 0)

SURFACE TREATMENT OF WIRES

Electrolytic tin-plating	Nominal thickness of 0.1μm to EN 13602 (grade A to NFC31111)
Electrolytic silver-plating	Nominal thickness of 1.02 μm to ASTM B 298
Electrolytic nickel-plating	Nominal thickness of 1.3 μm to ASTM B 335

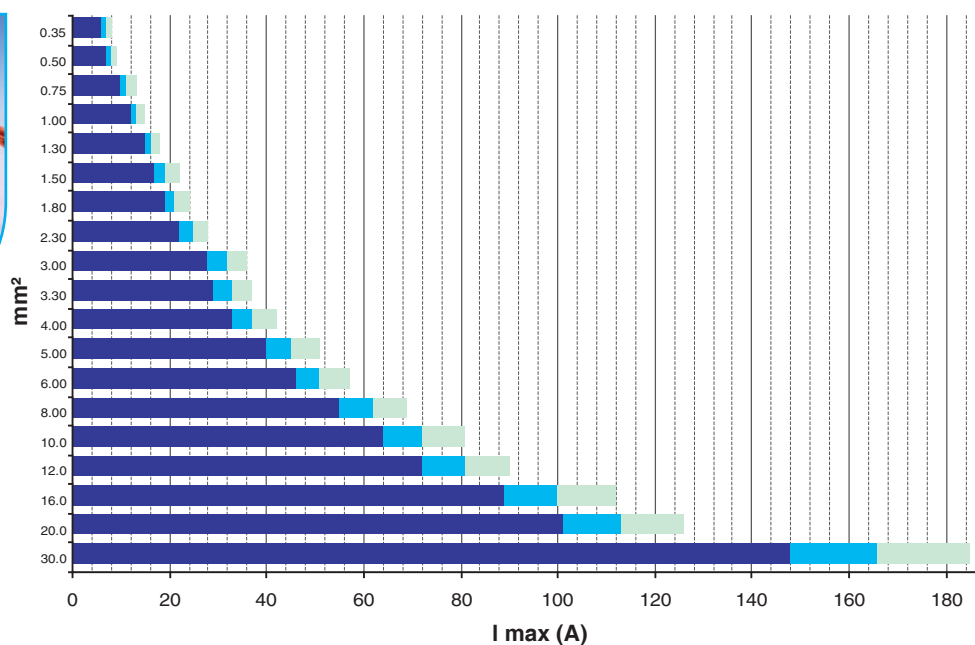
DESIGNATION

TR	4MM2	D4	CRN	5
Round braid (TP) Flat braid	Section mm ²	Outside diameter of the braid in mm	Bare (red) Copper (CRE) Tin-plated copper	Diameter of the wire in 1/100 mm

EXTRA-FLEXIBLE BRAID 5/100 - 7/100

Maximum Ampacity depending on the section of the braid for an ambient temperature of 25°C, 35°C and 45°C

Nominal section in mm ²	Construction		Outside diameter of the braid in mm	Ohmic resistance at 20°C (Ohm/km)	Linear mass kg / m	I max (A)		
	Number of wires	Wire diameter in mm				Amb. T. 25°C	Amb. T. 35°C	Amb. T. 45°C
0.35	8X24	0.05	1.00	49.26	0.0035	8	7	6
0.50	8X32	0.05	0.90	34.48	0.0050	9	8	7
0.75	8X47	0.05	1.30	29.99	0.0075	13	12	10
1.00	8X64	0.05	1.40	17.24	0.0100	15	14	12
1.30	8X84	0.05	1.60	13.27	0.0130	18	17	15
1.50	8X98	0.05	2.00	11.50	0.0150	22	20	17
1.80	8X112	0.05	2.00	9.58	0.0180	24	22	19
2.30	8X147	0.05	2.20	7.50	0.0230	28	25	22
3.00	8X187	0.05	3.00	5.75	0.0300	36	32	28
3.30	8X210	0.05	3.00	5.23	0.0330	37	33	29
4.00	8X245	0.05	3.00	4.31	0.0400	42	38	33
5.00	8X315	0.05	3.70	3.45	0.0500	51	46	40
6.00	8X200	0.07	4.00	2.88	0.0600	57	52	46
8.00	8X256	0.07	4.50	2.16	0.0800	69	62	55
10.0	12X216	0.07	5.00	1.73	0.1000	81	73	64
12.0	12X256	0.07	5.20	1.44	0.1200	90	81	72
16.0	12X344	0.07	6.30	1.08	0.1600	112	101	89
20.0	12X434	0.07	6.50	0.87	0.2000	126	114	101
30.0	12X656	0.07	11.30	0.58	0.3000	185	167	148



The values in the table correspond to a utilisation of a single braid in a temperature-stabilised environment and for a maximum braid temperature of:

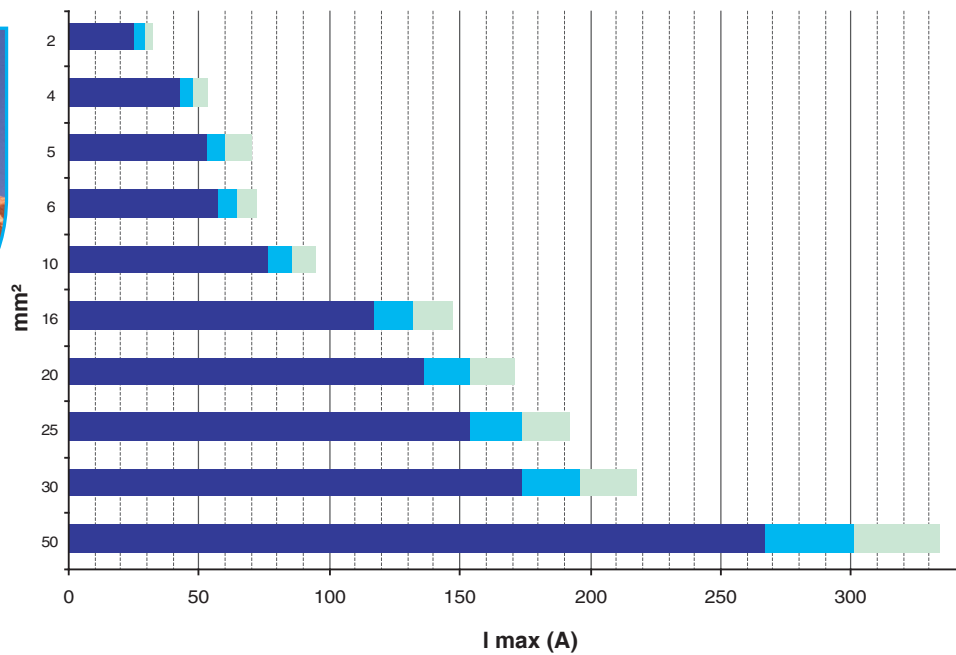
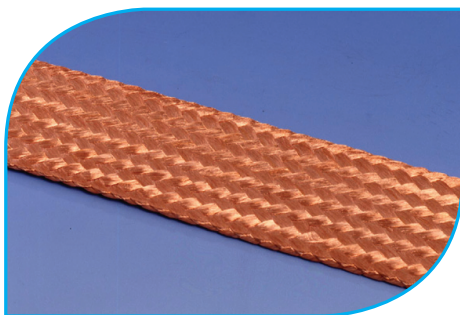
- 90°C for bare copper braids
– red copper
- 105°C for tin-plated copper braids

Selection principle

The tables below make it possible to define the maximum ampacity (I Max) for a braid of fixed section in stabilized operation in an ambient temperature (amb. T) of 25°C, 35°C and 45°C.

The values communicated are for information only and TRESSE METALLIQUE J.FORISSIER cannot be held responsible for the circumstances.

Nominal section in mm ²	Construction		Outside diameter of the braid in mm	Ohmic resistance at 20°C (Ohm/km)	Linear mass kg / m	I max (A)		
	Number of wires	Wire diameter in mm				Amb. T. 25°C	Amb. T. 35°C	Amb. T. 45°C
2	16x33	0.07	5x0.8	8.62	0.020	32	29	25
4	24x44	0.07	8x1	4.31	0.040	53	48	43
5	24x107	0.05	15x0.7	3.45	0.050	70	60	53
6	24x65	0.07	10x1.2	2.88	0.060	72	65	57
10	24x109	0.07	10x2	1.73	0.100	95	86	76
16	32x130	0,07	18x1.8	1.08	0.160	147	132	117
20	36x145	0.07	20x2	0.87	0.200	171	154	136
25	24x272	0.07	20x2.5	0.69	0.250	192	174	154
30	32x245	0.07	22x2.7	0.58	0.300	218	196	174
50	32x796	0.05	35x2.9	0.35	0.500	334	301	267



Processing

1 Sizing

The braids can be sized using a die so as to reduce the nominal diameter indicated in the table (previous page).

2 Batch size and packaging

MOQ is the Minimum Order Quantity.

The associated packaging corresponds to packaging behind the looms, thus limiting restart operations.

Extra-flexible flat braids				
Nomal section in mm ²	Linear mass kg / ml	MOQ kg	MOQ ml	Standard packaging
2.00	0.02	10	500	DIN 200
4.00	0.04	25	625	Bobine AL
6.00	0.06	25	417	Bobine AL
10.00	0.10	25	250	Bobine AL
16.00	0.16	25	156	Bobine AL
20.00	0.20	35	175	Bobine COUTY
25.00	0.25	35	140	Bobine COUTY
30.00	0.30	35	117	Bobine COUTY
50.00	0.50	35	70	Bobine COUTY

Others packaging

Plastic reel		Wooden drum	
DIN 160	5 kg	D 600	80 kg
DIN 200	10 kg	D 750	180 kg
DIN 250	20 kg	D 750 cerclé	300 kg
Bobine AL	30 kg	D 1050 cerclé	500 kg
Bobine COUTY	40 kg		

3- Compacting

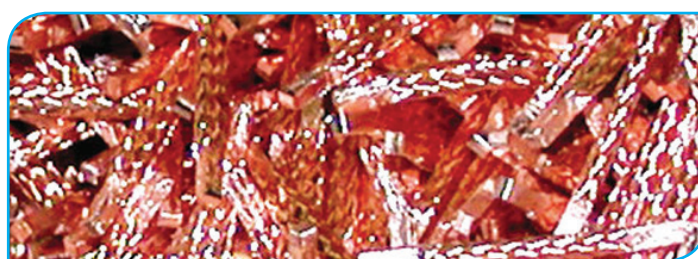
The "compacting operation" is made by press-welding of two or four faces of the braid. The result of this process is to precisely define the shapes and dimensions of the contact areas. The main advantages of this "compacted connector" is the very low cost of this solution and its ability to be easily welded for the assembly. The braid thus compacted can be delivered in a roll or turned out in small elements compacted at each end.

Compacting can be done on individual braids of maximum section 20 mm², or in an assembly of two braids with a maximum total section of 20 mm².

Extra-flexible round braids				
Nomal section in mm ²	Linear mass kg / ml	MOQ kg	MOQ ml	Standard packaging
0.35	0.0035	10	2857	DIN 200
0.50	0.0050	10	2000	DIN 200
0.75	0.0075	10	1333	DIN 200
1.00	0.0100	10	1000	DIN 200
1.30	0.0130	10	769	DIN 200
1.50	0.0150	10	667	DIN 200
1.80	0.0180	10	556	DIN 200
2.30	0.0230	10	435	DIN 200
3.00	0.0300	10	333	DIN 200
3.30	0.0330	10	303	DIN 200
4.00	0.0400	10	250	DIN 200
5.00	0.0500	10	200	DIN 200
6.00	0.0600	10	167	DIN 200
8.00	0.0800	10	125	DIN 200
10.00	0.1000	40	400	Bobine COUTY
12.00	0.1200	40	333	Bobine COUTY
14.00	0.1400	40	286	Bobine COUTY
16.00	0.1600	40	250	Bobine COUTY
20.00	0.2000	40	200	Bobine COUTY
30.00	0.3000	40	133	Bobine COUTY

Others packaging

Plastic reel	
DIN 160	5 kg
DIN 200	10 kg
DIN 250	20 kg
Bobine AL	30 kg
Bobine COUTY	40 kg



INTERNATIONAL WIRE Group



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