

SOTR FOR 90/10 CU-NI PIPES

90/10 CU-NI PIPES

EXTRACT OF NES 779 Part 3

1) **PHYSICAL CHARACTERISTICS AND MECHANICAL PROPERTIES**

(a) Chemical Composition

The alloy to conform to the chemical composition as detailed below.

<u>Element</u>	<u>Per Cent by Weight</u>	
	<u>Not less Than</u>	<u>Not More than</u>
Nickel	10.0	11.0
Manganese	0.5	1.0
Iron	1.0	2.0
Copper	REM	
Impurities:-		
Carbon	-	0.05
Aluminium	-	0.03
Suphur	-	0.05
Boron	-	0.02
Phosphorus	-	0.01
Lead	-	0.01
Silicon	-	0.05
Bismuth	-	0.002
Total Impuries	-	0.30

(b) Mechanical Properties

- i) The density of this alloy at 20 °C is 8.94g/cm³
- ii) At room temperature the mechanical properties from nominated test pieces as specified are to be as detailed below.

<u>Condition</u>	<u>Tensile Strength</u>	<u>Elongation on 5.65√So</u>	<u>Hardness</u>
	<u>N/mm²</u>	<u>Gauge Length %</u>	<u>HV</u>
	<u>Minimum</u>	<u>Minimum</u>	<u>Maximum</u>
Annealed	280	30	90

Note: - Rods produced by a GFM forging process are to be classed as "Rods and Sections".

**90 / 10 Cu Ni Pipes To NES 779 PART III (CLASS 1-10/1-16) &
BR 3013(2) PART 2 (PN10 / PN16).
Dimensions**

<u>SR. NO.</u>	<u>N.B.</u>	<u>OD</u>	<u>THK</u>	<u>WT. KG./MTR (APPROX.)</u>	<u>QTY./SHIP MTRS.</u>	<u>REMARKS</u>
01	-	6.0	0.8	0.12	Refer PA	
02	-	8.0	0.8	0.16	"	
03	-	12.0	0.8	0.25	"	
04	10	16.0	1.0	0.42	"	
05	15	20.0	1.0	0.53	"	
06	20	25.0	1.5	1.0	"	
07	25	30.0	1.5	1.2	"	
08	32	38.0	1.5	1.5	"	
09	40	44.5	1.5	1.8	"	
10	50	57.0	1.5	2.3	"	
11	65	76.1	2.0	4.2	"	
12	80	88.9	2.5	6.0	"	
13	100	108.0	2.5	7.4	"	
14	125	133.0	3.0	11.0	"	
15	150	159.0	3.0	13.0	"	
16	175	193.7	3.5	19.0	"	
17	200	219.1	4.0	24.0	"	
18	250	267.0	4.0	29.0	"	

Notes:

- (a) All pipes shall be hydrostatically tested to Test Pressure of 30 Bar.
- (b) Following production tests are required to be carried out on each length of pipes in addition to all tests referred in NES specifications.
 - (i) Eddy current test as per BS 3889 Part 2B –For pipes of NB up to 100 mm.
 - (ii) Ultrasonic tests -For pipes of NB more than 100 mm.
 - (iii) Ultrasonic thickness gauging – For all pipes
- (c) All pipes are to conform to the chemical composition detailed in BS 2871 Part II, CN102.