



Copper tubes, arteries for FLUID applications





The Number Of Brazed Joints In The Refrigeration Piping Is To Be Kept At Minimum, Which Is Possible Only With Mandev Make Half Hard "ONE SIDE EXPANDED" Copper Tubes.

"Mandev Tubes Has Always Been Known For Its Perfection, Consistent Quality And Providing Total Customer Satisfaction. This Has Been A Legacy That I Have Inherited From My Father And I Promise To Carry It On. It Will Be Our Constant Endeavour To Provide The Best Quality And Maximize Customer Satisfaction Always"

Ramesh R. Munot (Managing Director-Mandev Tubes Pvt. Ltd.)

A Promise To Deliver Quality Products

At Mandev Tubes, We Are Committed To Consistently Deliver The Highest Quality So That We Achieve Total Customer Satisfaction. We Have A Burning Desire To Exceed Perfection Which Is Met With Expertise & Knowledge. We Aim To Become The Top Most DHP Grade Tube Producer In The Country & Gain Global Recognition.

We are an ISO 9001:2015, 14001:2015, 45001:2018, 7396-1:2016 Certified Company by URS & CE Mark by WRG.

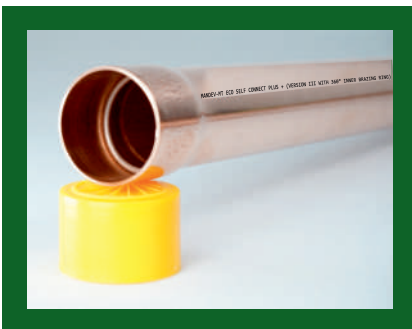
Products

As One Of The Leading Copper Tubes Manufacturing Company, We Have A Range Of Products To Meet Every Customer's Need. Our Products Are Produced Using The Best Machinery & Manufacturing Technology.

ONE END EXPANDED COPPER TUBES WITH BRAZING RING (PRODUCT WITH USP)



MANDEV MT-ECO SELF CONNECT PLUS+ VERSION III, WITH 360° INNER BRAZING RING



Copper Tube With An Innovative Design (Regd. No. 304780) Which Are Mechanically Expanded At One End And Have A Pre-inserted Brazing Ring, Which Helps Avoid A Coupling & Brazing Joints During Installation And Save Brazing Rod And Further Costs.

One End Expanded Tubes With Brazing Ring Are Provided In The Following Outside Diameter & Size Range:

Min. Diameter : 3/16" (4.76 MM)

Min. Wall Thickness : 0.5 MM

Min. Length : 2.0' (0.6 MM)

Max. Diameter : 41/4" (108 MM)

Max. Wall Thickness : 3 MM

Max. Length : 19' (5.79 MM)

Mandev Make Copper Tubes Are Eddy Current Tested, RoHS Compliant, R-432,R-410A & R-22 Refrigeration Compatible & With Low Residue Content Below 0.20 MG/DM2.

QUALITY FEEDBACK OF BRAZING RING IN COPPER TUBES RECEIVED FROM CLIENTS :

- ▶ The result of the testing was very nice enhanced quality for workmanship, installation & execution of Brazing pipes together in a shorter time span with great craftsmanship in a neat and tidy finish.
- ▶ By this we can execute our Brazing work faster compared to the conventional practice of doing Brazing with Brazing Rod in one hand & torch in the other.
- ▶ Instead of occupying two hands while doing Brazing, We could get it done with the one hand more skillfully and with better workmanship.
- ▶ Skill level required is nominal and hence any one (even unskilled welder) can do leak proof joints with basic knowledge of handling torches.
- ▶ It becomes more Cost effective, as only required brazing filler metal is used and no excess material is wasted anywhere.

PANCAKE COIL COPPER TUBE



MT - ECO FLEX / MT ECO FLEX PLUS+

Pancake Coils Are Mainly Used In The Installation Of Air Conditioning & Refrigerator Systems.

Pancake Coils Are Produced In The Following Outside Diameter & Size Ranges:

Minimum Diameter : 3/16" (4.76MM)

Maximum Diameter : 7/8" (22.2MM)

Minimum Wall Thickness : 0.5MM

Maximum Wall Thickness : 1.2MM

Minimum Length : 6.6' (2 Mtr.)

Maximum Length: 50' (15.24 Mtr.)

Coils Can Be Catered As Per Client's Requirements.

COPPER FITTINGS



MT - ECO FIT

Copper Fittings & Other Tube Assembled Components Are Produced For Several Applications Like Air Conditioning, Refrigeration, Gas Heating & Plumbing.

Fittings Are Produced In Size Range:

Minimum Diameter : 1/4" (6.35MM)

Maximum Diameter : 4 1/4" (108MM)

Minimum Wall Thickness : 0.6MM

Maximum Wall Thickness : 2.5MM

ADVANTAGES OF ONE EXPANDED HALF HARD COPPER TUBES

COUPLING - FREE INSTALLATION

ELBOW - FREE INSTALLATION



One Side Brazed Expanded Tube Joint Installation



Two Side Brazed Coupling Joint Installation



To Save 1 Joint Out of 2 Joint



Bending on Project Site, No joint No Brazing Installation



Two Side Brazed Elbow Joint Installation



To Save 2 Joint Out of 2 Joint



TECHNICAL SPECIFICATIONS:

SR NO	SPECIFICATION NAME - COPPER TUBES	ASTM B 68	ASTM B 75	ASTM B 88	ASTM B 280	JIS H 3300 (POPULAR IN VRF BUSINESS INDIA)
	CHEMICAL & MECHANICAL PROPERTIES	AMERICAN STANDARD	AMERICAN STANDARD	AMERICAN STANDARD	AMERICAN STANDARD	JAPANESE INDUSTRIAL STANDARD
1	PARAMETER	STANDARD SPECIFICATION FOR SEAMLESS COPPER TUBE, BRIGHT ANNEALED	STANDARD SPECIFICATION FOR SEAMLESS COPPER TUBE	STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE	STANDARD SPECIFICATION FOR SEAMLESS COPPER TUBE FOR AIR CONDITIONING AND REFRIGERATION FIELD SERVICE	JIS - COPPER & COPPER ALLOY SEAMLESS PIPES & TUBES
2	COPPER	99.90 %	99.90 %	99.90 %	99.90 %	99.90 %
3	PHOSPHOROUS	0.015 - 0.040	0.015 - 0.040	0.015 - 0.040	0.015 - 0.040	0.015 - 0.040
4	TEMPER SOFT HARDNESS (HV - 5 KG)	60 Max.	60 Max.	60 Max.	60 Max.	60 Max.
	TENSILE STRENGTH	205 Mpa	205 Mpa	205 Mpa	205 Mpa	205 Mpa
	ELONGATION	40 % Min.	Not Specified	40 % Min.	40 % Min.	40 % Min.
5	TEMPER HALF HARD HARDNESS	Not Specified	70 Min.	70 Min.	70 Min.	70 - 110 Min
	TENSILE STRENGTH	Not Specified	250 Mpa	250 Mpa	250 Mpa	245-325 Mpa
	ELONGATION	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
6	DIAMETER TOLERANCE					
	6MM TO 16MM INCL	±0.05MM	±0.05MM	±0.025MM	±0.025MM	±0.08MM
	16MM TO 25.4MM INCL	±0.064MM	±0.064MM	±0.025MM	±0.025MM	±0.09MM
	25.4MM TO 50.8MM	±0.076MM	±0.076MM	±0.038MM	±0.038MM	±0.012MM
	50.8MM TO 76MM	±0.10MM	±0.10MM	±0.051MM	±0.051MM	±0.015MM
7	WALL THICKNESS TOLEREANCE					
	OVER 0.6MM TO AND INCL 0.8MM	±0.63MM	±0.63MM	±0.09MM	±0.09MM	±0.10MM
	OVER 0.8MM TO AND INCL 1.4MM	±0.88MM	±0.88MM	±0.10MM	±0.10MM	±0.13MM
	OVER 1.4MM TO AND INCL 2MM	±0.10MM	±0.10MM	±0.18MM	±0.18MM	±0.18MM

SPECIFICATION : • ASTM • JIS • BS-EN • IS AND • OTHER SIMILAR STANDARDS

CHART 1

VRF STANDARD WEIGHT CHART

SPECIFICATION & SIZE FOR VRF COMPATIBLE AIR CONDITION GRADE COPPER TUBES HALF HARD TEMPER 3.05 MTR/ 10 FEET STRAIGHT TUBE WEIGHT CHART

Sr. No.	CODE	DESCRIPTION SIZE - "MT ECO SELF CONNECT" (ONE END EXPANDED HALF HARD) VRF COMPATIBLE COPPER TUBES (*TRACIBILITY - H, ECL, PPB, PHT)	TEMPER	WEIGHT PER METER (IN KGS.)	WEIGHT 10 FEET (IN KGS)	NO. OF TUBES PER BUNDLE	APPROX. WEIGHT PER BUNDLE (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	VRF	1/4" (6.35 mm) x 21 swg (0.8 mm)	Half Hard	0.127	0.387	60	23.200 Kg	9,216
2	VRF	3/8" (9.52 mm) x 21 swg (0.8 mm)	Half Hard	0.199	0.607	50	30.400 Kg	6,144
3	VRF	1/2" (12.7 mm) x 21 swg (0.8 mm)	Half Hard	0.272	0.830	40	33.200 Kg	4,608
4	VRF	5/8" (15.88 mm) x 19 swg (1.0 mm)	Half Hard	0.425	1.296	25	32.400 Kg	4,493
5	VRF	3/4" (19.05 mm) x 21 swg (0.8 mm)	Half Hard	0.417	1.280	25	32.000 Kg	3,072
6	VRF	3/4" (19.05 mm) x 19 swg (1.0 mm)	Half Hard	0.515	1.570	25	39.300 Kg	3,744
7	VRF	7/8" (22.2 mm) x 21 swg (0.8 mm)	Half Hard	0.490	1.500	20	39.000 Kg	2,633
8	VRF	7/8" (22.2 mm) x 19 swg (1.0 mm)	Half Hard	0.605	1.850	20	37.000 Kg	3,210
9	VRF	1.0" (25.4 mm) x 20 swg (0.9 mm)	Half Hard	0.612	1.900	20	38.000 Kg	2,520
10	VRF	1.0" (25.4 mm) x 19 swg (1.0 mm)	Half Hard	0.696	2.140	20	42.800 Kg	2,808
11	VRF	1 1/8" (28.6 mm) x 19 swg (1.0 mm)	Half Hard	0.787	2.400	15	36.000 Kg	2,496
12	VRF	1 1/4" (31.8 mm) x 18.5 swg (1.1 mm)	Half Hard	0.941	2.900	12	34.800 Kg	2,477
13	VRF	1 3/8" (34.9 mm) x 18 swg (1.2 mm)	Half Hard	1.155	3.500	10	35.000 Kg	2,513
14	VRF	1 1/2" (38.1 mm) x 17.5 swg (1.30 mm)	Half Hard	1.350	4.100	8	32.800 Kg	2,448
15	VRF	1 5/8" (41.3 mm) x 17 swg (1.43 mm)	Half Hard	1.594	4.850	7	34.000 Kg	2,481
16	VRF	1 3/4" (44.45 mm) x 16 swg (1.62 mm)	Half Hard	1.950	5.960	6	35.700 Kg	2,592
17	VRF	2 1/8" (54.0 mm) x 16 swg (1.62 mm)	Half Hard	2.400	7.300	5	36.500 Kg	2,134

NOTE: ABOVE DIAMETER STRAIGHT LENGTH, WILL BE SUPPLIED (+/-) 15 - 20% IN 8'/9' LONG LENGTH

SOFT TEMPER 15.24 MTR / 50 FEET PANCAKE COIL TUBE WEIGHT CHART

SR NO.	CODE	DESCRIPTION SIZE - COPPER TUBE VRF / VRF PAN CAKE SOFT COIL (* TRACIBILITY - H, ECL, PPB)	TEMPER	WEIGHT PER METER (IN KGS.)	15.24 mtr / 50 FEET VRF COIL WEIGHT			
					PER COIL WEIGHT	NUMBER OF COIL PER BOX	WEIGHT PER BOX (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	VRF	1/4" (6.35 mm) x 21 swg (0.8 mm)	Soft	0.127	1.9	16 nos	30.40 Kg	7,680
2	VRF	3/8" (9.52 mm) x 21 swg (0.8 mm)	Soft	0.199	3.0	9 nos	27.00 Kg	5,120
3	VRF	1/2" (12.7 mm) x 21 swg (0.8 mm)	Soft	0.272	4.1	7 nos	28.70 Kg	3,840
4	VRF	5/8" (15.88 mm) x 19 swg (1.0 mm)	Soft	0.425	6.4	5 nos	32.00 Kg	3,744
5	VRF	3/4" (19.05 mm) x 19 swg (1.0 mm)	Soft	0.509	7.8	4 nos	31.20 Kg	3,120
6	VRF	7/8" (22.2 mm) x 19 swg (1.0 mm)	Soft	0.605	9.2	3 nos	27.60 Kg	2,674

Beware Of (1) Duplicate Mandev Make (2) Mandev Light Weight & Light (Thin) Wall Thickness Tubes, Imported / Other Approved Makes / Non Approved Makes - Supplied & Installed For VRF Air Conditioning Application For Building Projects.

WE CAN ALSO CATER CUSTOMIZED SIZES IF REQUIRED BY CUSTOMER RANGING FROM

ONE END EXPANDED TUBES ARE PROVIDED IN THE FOLLOWING OUTSIDE DIAMETER AND SIZE RANGE:	PANCAKE IS PRODUCED IN THE FOLLOWING OUTSIDE DIAMETER AND SIZE RANGES
Minimum diameter: 3/16" (4.76 mm) Maximum diameter: 4 1/4" (108 mm) Minimum Wall Thickness: 0.6 mm Maximum Wall Thicknesses: 2.5mm Minimum Length : 2.0' (0.6 Mtr.) Maximum Length : 19' (5.79Mtr)	Minimum diameter: 3/16" (4.76mm) Maximum diameter: 7/8" (22.2MM) Minimum Wall Thickness: 0.5 mm Maximum Wall Thicknesses: 1.2 mm Minimum Length : 6.6' (2.0 Mtr.) Maximum Length : 50' (15.24 Mtr)

SUBJECT TO CONFIRMATION

CHART 2 HEAVY THICKNESS - GOVT. CPWD WEIGHT CHART

**SPECIFICATION & SIZE FOR VRF COMPATIBLE AIR CONDITIONING GRADE COPPER TUBES
HALF HARD TEMPER 3.05 MTR/ 10 FEET**

**STRAIGHT TUBE WEIGHT CHART IN THE FOLLOWING OUTSIDE DIAMETER AND SIZE RANGES
FOR HEAVY WALL THICKNESS (16 & 18 SWG), AS PER CPWD SPECIFICATION**

Sr. No.	CODE	DESCRIPTION SIZE - "MT ECO SELF CONNECT" (ONE END EXPANDED) (HALF HARD) VRF COMPATIBLE COPPER TUBES	TEMPER	WEIGHT PER METER (IN KGS.)	WEIGHT 10 FEET (IN KGS)	NO. OF TUBES PER BUNDLE	APPROX. WEIGHT PER BUNDLE (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	VRF	1/4" (6.35 mm) x 1.2 mm (18 Swg)	Half Hard	0.174	0.531	60	31.900	13536
2	VRF	3/8" (9.52 mm) x 1.2 mm (18 Swg)	Half Hard	0.281	0.858	50	42.900	9024
3	VRF	1/2" (12.7 mm) x 1.2 mm (18 Swg)	Half Hard	0.389	1.186	40	47.400	6768
4	VRF	5/8" (15.88 mm) x 1.2 mm (18 Swg)	Half Hard	0.496	1.513	25	37.800	5414
5	VRF	3/4" (19.05 mm) x 1.2 mm (18 Swg)	Half Hard	0.603	1.840	25	46.000	4512
6	VRF	7/8" (22.2 mm) x 1.2 mm (18 Swg)	Half Hard	0.710	2.165	20	43.300	3872
7	VRF	1.0" (25.4 mm) x 1.2 mm (18 Swg)	Half Hard	0.818	2.495	20	49.900	3384
8	VRF	1 1/8" (28.6 mm) x 1.2 mm (18 Swg)	Half Hard	0.926	2.824	15	42.400	3005
9	VRF	1 1/4" (31.8 mm) x 1.2 mm (18 Swg)	Half Hard	1.034	3.154	12	37.800	2703
10	VRF	1 3/8" (34.9 mm) x 1.62 mm (16 Swg)	Half Hard	1.519	4.632	10	46.300	3343
11	VRF	1 1/2" (38.1 mm) x 1.62 mm (16 Swg)	Half Hard	1.664	5.014	8	40.100	3062
12	VRF	1 5/8" (41.3 mm) x 1.62 mm (16 Swg)	Half Hard	1.810	5.520	7	38.600	2825
13	VRF	1 3/4" (44.45 mm) x 1.62 mm (16 Swg)	Half Hard	1.954	5.960	6	35.800	2625
14	VRF	2 1/8" (54.0 mm) x 1.62 mm (16 Swg)	Half Hard	2.390	7.290	5	36.500	2161

**SOFT COPPER COIL ARE PRODUCES IN THE FOLLOWING OUTSIDE DIAMETER
AND SIZE RANGES 18 SWG (STANDARD VRF GRADE WALL THICKNESS)
(AS PER VARIOUS OEM'S VRF GRADE COPPER TUBES REQUIREMENT)**

SR NO.	CODE	DESCRIPTION SIZE - "MT ECO FLEX" (SOFT COIL) VRF COMPATIBLE COPPER TUBES	TEMPER	WEIGHT PER METER (IN KGS.)	SOFT TEMPER 15.24 MTR / 50 FEET PANCAKE COIL TUBE WEIGHT CHART			
					PER COIL WEIGHT	NUMBER OF COIL PER BOX	WEIGHT PER BOX (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	VRF	1/4" (6.35 mm) x 1.2 mm (18 Swg)	Soft	0.174	2.652	16	42.400	11280
2	VRF	3/8" (9.52 mm) x 1.2 mm (18 Swg)	Soft	0.281	4.282	9	38.500	7520
3	VRF	1/2" (12.7 mm) x 1.2 mm (18 Swg)	Soft	0.389	5.929	7	41.500	5640
4	VRF	5/8" (15.88 mm) x 1.2 mm (18 Swg)	Soft	0.496	7.560	5	37.800	4512
5	VRF	3/4" (19.05 mm) x 1.2 mm (18 Swg)	Soft	0.603	9.190	4	36.800	3760
6	VRF	7/8" (22.2 mm) x 1.2 mm (18 Swg)	Soft	0.710	10.820	3	32.500	3227

**Beware of (1) Duplicate Mandev Make (2) Mandev Light weight & Light (Thin) wall Thickness Tubes, Imported /
other Approved Makes / Non Approved Makes - Supplied & Installed for VRF Air Conditioning Application for Building Projects.**

CHART 3 NON VRF (SPLIT AIR CONDITIONERS & DUCTABLE) WEIGHT CHART

**SPECIFICATION , SIZE & WEIGHT CHART : FOR NON VRF AIR CONDITIONING GRADE
COPPER TUBES (STANDARD WALL THICKNESS) AS PER AIR CONDITONING OEMs
(ORIGINAL EQUIPMENT MANUFACTURER) INDUSTRY**

Sr. No.	CODE	DESCRIPTION SIZE - "MT ECO SELF CONNECT" (ONE END EXPANDED) (HALF HARD) VRF COMPATIBLE COPPER TUBES	TEMPER	WEIGHT PER METER (IN KGS.)	WEIGHT 10 FEET (IN KGS)	NO. OF TUBES PER BUNDLE	WEIGHT PER BUNDLE (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	M	3/4" (19.05 mm) x 21 Swg (0.8 mm)	Half Hard	0.417	1.280	25	32.000 Kg	3024
2	M	7/8" (22.2 mm) x 21 Swg (0.8 mm)	Half Hard	0.490	1.500	20	30.000 Kg	2595
3	M	1.0" (25.4 mm) x 20 Swg (0.88 mm)	Half Hard	0.612	1.900	20	38.000 Kg	2494
4	M	1 1/8" (28.6 mm) x 20 Swg (0.9 mm)	Half Hard	0.711	2.170	15	32.500 Kg	2266

NOTE: ABOVE DIAMETER STRAIGHT LENGTH, WILL BE SUPLIED (+/-) 15 - 20% IN 8'/9' LONG LENGTH

SOFT TEMPER 15.24 MTR / 50 FEET PANCAKE COIL TUBE WEIGHT CHART

SR NO.	CODE	DESCRIPTION SIZE - COPPER TUBES NON VRV / VRF PANCAKE SOFT COIL (TRACEABILITY - H, ECL, PPB)	TEMPER	WEIGHT PER METER (IN KGS.)	SOFT TEMPER 15.24 MTR / 50 FEET NON VRV / VRF COIL WEIGHT CHART			
					PER COIL WEIGHT	NUMBER OF COIL PER BOX	WEIGHT PER BOX (IN KGS)	MAXIMUM BURST PRESSURE (IN PSI)
1	VRV	1/4" (6.35 mm) x 23 Swg (0.59 mm)	Soft	0.098	1.500	16 NOS	24.00 Kg	5575
2	VRV	5/16" (7.94 mm) x 23 Swg (0.61 mm)	Soft	0.125	1.900	14 NOS	26.60 Kg	4610
3	VRV	3/8" (9.52 mm) x 22.5 Swg (0.65 mm)	Soft	0.164	2.500	9 NOS	22.50 Kg	4094
4	VRV	1/2" (12.7 mm) x 22.5 Swg (0.67 mm)	Soft	0.230	3.500	7 NOS	24.50 Kg	3165
5	VRV	5/8" (15.88 mm) x 22.5 Swg (0.68 mm)	Soft	0.295	4.500	5 NOS	22.50 Kg	2570
6	VRV	3/4" (19.05 mm) x 21 Swg (0.8 mm)	Soft	0.430	6.500	4 NOS	26.00 Kg	2520

PACKAGING :



PANCAKE COPPER COIL



PANCAKE COIL BOX



COPPER TUBES FITTINGS



CELLO TAPE (WITH MANDEV'S
BRANDED)

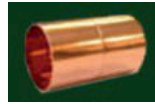


COPPER TUBES BUNDLE

SAVING BY INSTALLING MT ECO SELF CONNECT PLUS + BY SKIPPING OF COUPLING



Skip Use of Coupling



To Save 1 joint Out of 2 joints



Two sided Brazed Coupling joint Installation



One sided Brazed Expanded Tube joint Installation

PRODUCT USP - SAVING IN COST OF VRF AIR-CONDITIONING GRADE COPPER TUBE FOR BUILDING PROJECT FOR 1000.4 MTR / APPROXIMATE WEIGHT OF 417.2 KG FOR MANDEV MAKE V/S OTHER MAKE.

NOTE :- AS YOU SKIP COUPLING AND WHEN YOU INSTALL MANDEV MAKE ONE END EXPANDED - " MT ECO SELF CONNECT" SAVE 50% JOINTS IN INSTALLATION AND COMMISSIONING @ EXTRA COST OF -0.63% PER MTR OF COPPER TUBES.

SR. NO.	PARTICULAR	OTHER MAKE	MANDEV MAKE	
1	SR. No	1	2	
2	Diameter Size	19.05MM	19.05MM	
3	Wall Thickness	0.8 MM	0.8 MM	
4	Weight Per Mtr.	0.417	0.417	
COST COMPARISON OF COPPER TUBES	5	Copper Tube Rate Per Kgs (as on 01.01.2023) 100% PAYMENT AGAINST PROFORMA INVOICE	850.000	900.000
	6	Copper Tube Rate Per Mtr. [Sr.. No. 4 x 5 = 6]	354.45	375.30
COST V/S QUALITY V/S TIME FOR MANDEV MAKE V/S OTHER MAKE	7	Copper Tube Requirement in KG for Air-Conditioning	417.167	417.167
	8	Copper Pipe Requirement in Mtr. [Sr. No. 7/4 = 8]	1000.4	1000.4
	9	Standard Length of Copper Tube in Mtr.	3.05	3.05
	10	Copper Tube in Nos. [Sr. No.8/9 = 10]	328	328
	11	Assuming 2/3 Nos.of Tube [Sr. No. 10] need Coupling Requirement for other Make	218	0
	12	Coupling Cost Per Piece	46.00	0.00
	13	Total Cost of Copper Couplings [Sr.No. 11 X 12 = 13]	10012.67	0.00
	14	Two Side V/s One side of One End Expanded Copper Tube Brazing Cost per Piece.	60.00	30.00
	15	Total Cost of Brazing for Two Side of Coupling for other approved make V/s One side of One End Expanded (Mandev Make) [Sr.No. 11 X 14 = 15]	13060	6530
	16	Total Cost [Sr. No. (5 x 7) + 13 + 15 = 16]	377664	381980
FOR INSTALLATION & COMMISSIONING	17	Copper Tube Rate Per Mtr.(Including Brazing cost with coupling for other make V/s with One End Expanded for Mandev make [Sr.16/8=17]	377.51	381.83
	18	NET SAVING/EXTRA COST PER Mtr. in Percentage (%)	0.00%	-1.13%
	19	Average in Percentage (%) SAVING/EXTRA COST FOR MANDEV MAKE	EXTRA COST :- (-1.13%) EXTRA COST (+ 0.5 %) SAVING IN NITROGEN = (-0.63 %) TOTAL EXTRA COST PER MTR.	
	20	No of Joints	436	218
21	No of Joints Saved	0	218	
22	Percentage (%) of Joints Saved	0.00%	50.00%	
23	Total RMT of Copper Pipe requirement (Sr. No. 8 for 1 Diameter 15 mm)	1000.4	{ 1) COMPLETE VRF PIPING CIRCUIT FOR PROJECT 2) TOTAL QUANTITY IN MTRS }	
24	Total Nos. of Joints Saved (Sr. No. 21 for Diameter 19.05 mm)	218	{ SAVING OF TOTAL NOS OF BRAZING JOINTS FOR COMPLETE PROJECT }	
25	For Length of every 9 running mtr. Air-Conditioning Tubing System [Sr.No. 23/24 = 25]	Save 1 Joint, By Installing Mandev Make - MT ECO SELF CONNECT PLUS+ (One End Expanded Copper Tubes)		
26	Conclusion	Sr. No. 23, In Length of 1000.4 Mtr. Air-Conditioning Tubing circuit in Building Projects, 218 nos of joints are saved. So, In every 4.5 mtr Length 1 joint gets eliminated and field failure due to human error in brazing is removed for 218 joints.		
EVERY 4.5 Mtr	1000.4 Mtr / 218 Nos. SAVE BRAZING JOINTS = 4.5 Mtr (15 Feet)			

SAVING BY INSTALLING MT ECO SELF CONNECT PLUS + BY SKIPPING OF ELBOW



Skip use of Elbow



To Save 2 joints

X



2 Sided Brazed Elbow Joint Installation

✓



No joint, No Brazing Installation

PRODUCT USP - SAVING IN COST OF VRF AIR-CONDITIONING GRADE COPPER TUBE FOR BUILDING PROJECT FOR 1000.4 MTR / APPROXIMATE WEIGHT OF 417.200 KG FOR MANDEV MAKE V/S. OTHER MAKE







NOTE :- AS YOU SKIP ELBOW AND WHEN YOU INSTALL MANDEV MAKE ONE END EXPANDED "MT ECO SELF CONNECT PLUS+", SAVE 50% JOINTS IN INSTALLATION AND COMMISSIONING @ EXTRA COST OF (-1.09) % PER MTR OF COPPER TUBES.

NOTE (I) :- IF YOU DO BENDING OF HALF HARD COPPER TUBE ON SITE, THERE WILL BE NO CHARGES FOR BRAZING AND JOINING ELBOWS WITH TUBES.

NOTE (II) :- ONLY TIME FOR BENDING WILL BE SPENT ON MECHANICAL BENDER. (ONE TIME INVESTMENT FOR BENDER.) BENDER AVAILABLE IN MARKET UPTO 35 MM.

SR. NO.	PARTICULAR	OTHER MAKE	MANDEV MAKE	
1	SR. No	1	2	
2	Diameter Size	19.05MM	19.05MM	
3	Wall Thickness	0.8 MM	0.8 MM	
4	Weight Per Mtr.	0.417	0.417	
COST COMPARISON OF COPPER TUBES	5	Copper Tube Rate Per Kgs (as on 01.01.2023) 100% PAYMENT AGAINST PROFORMA INVOICE	850.000	900.000
	6	Copper Tube Rate Per Mtr. [Sr.. No. 4 x 5 = 6]	354.45	375.30
COST V/S QUALITY V/S TIME FOR MANDEV MAKE V/S OTHER MAKE	7	Copper Tube Requirement in KG for Air-Conditioning	417.167	417.167
	8	Copper Pipe Requirement in Mtr. [Sr. No. 7/4 = 8]	1000.4	1000.4
	9	Standard Length of Copper Tube in Mtr.	3.05	3.05
	10	Copper Tube in Nos. [Sr.No.8/9 = 10]	328	328
	11	Assuming 1/3 Nos. of Tube [Sr. No. 10] need Elbow Requirement for other Make	108	0
	12	Elbow Cost Per Piece	78.00	0.00
	13	Total of Cost Elbow V/s No Cost of Elbow [Sr. No. 11 x 12 = 13]	8424.00	0.00
	14	Two Side Brazing Cost of Copper Elbow per Piece.	60.00	0.00
	15	Total Cost of Two Side Brazing of Elbow [Sr.No. 11 x 14 = 15]	6480	0
	16	Total Cost [Sr. No. (5 x 7) + 13 + 15 = 16]	369496	375450
FOR INSTALLATION & COMMISSIONING	17	Copper Tube Rate Per Mtr.(Including Brazing cost with Elbow for other make V/s with One End Expanded for Mandev make	369.35	375.30
	18	NET SAVING/EXTRA COST PER Mtr. in Percentage (%)	0.00%	-1.59%
	19	Average in Percentage (%) SAVING / EXTRA COST FOR MANDEV MAKE	[EXTRA COST :- (-1.59 %) SAVING (+ 0.5%)] [SAVING IN NITROGEN = (-1.09) TOTAL EXTRA COST PER MTR.]	
	20	No of Joints	216	0
21	No of Joints Saved	0	216	
22	Percentage (%) of Joints Saved	0.00%	100.00%	
23	Total RMT of Copper Pipe Requirement (Sr. No. 8 for Diameter 19.05 mm)	1000 [1) COMPLETE VRF PIPING CIRCUIT FOR PROJECT]		
24	Total Nos. of Joints Saved (Sr. No. 21 for Diameter 19.05 mm)	216 [SAVINGS OF TOTAL NOS OF BRAZING JOINTS FOR COMPLETE PROJECT]		
25	For Length of every 4.5 running mtr. Air-Conditioning Tubing System [Sr.No. 23/24 = 25]	Save 2 Joints, By Installing Mandev Make - MT ECO SELF CONNECT (One End Expanded Copper Tubes)		
26	Conclusion	Sr. No. 23, In Length of 1000.4 Mtr. Air-Conditioning Tubing circuit in Building Projects, 216 nos of joints are saved. So, In every 4.5 mtr Length 1 joint gets eliminated and field failure due to human error in brazing is removed for 216 joints.		
EVERY 4.5 Mtr & 2.3 Mtr	1000.4 Mtr / 216 Nos. SAVE BRAZING JOINTS = 4.5 Mtr / 15 Feet, SAVE 1 BRAZING JOINT			
	So, 1000.4 Mtr/ 434 Nos. (218 Nos Coupling Joints + 216 Nos Elbow Joints) SAVE BRAZING JOINTS = 2.3 Mtr / 7.5 Feet			

MANDEV MAKE TRACEABILITY FOR COPPER COILS & STRAIGHT TUBES

SR NO.	TRACEABILTY FEATURES	VRF SOFT COPPER COIL (LENGTH 15.24 MTR / 50 FEET)	VRF HALF HARD COPPER TUBES (LENGTH 2.44 MTR / 8 FEET OR 3.05 MTR / 10 FEET)	NON VRF SOFT COPPER COIL STANDARD COIL (LENGTH 15.24 MTR / 50 FEET)
1	PRODUCT NAME	MT ECO FLEX / MT ECO FLEX PLUS+	MT ECO SELF CONNECT/ MT ECO SELF CONNECT PLUS +	MT ECO FLEX(SOFT) NON VRF STANDARD COPPER COIL
2	MANDEV'S STRAIGHT TUBES WITH ONE END EXPANDED WITH REGISTERED DESIGN NO. 224751 -09	✗	✓	✗
3	MANDEV'S ONE END EXPANDED TUBES CAN REDUCE 78% COST BY ELIMINATING THE USE OF COUPLING FOR ACR APPLICATIONS PLEASE REFER ATTACHED 1000 Mtr CASE STUDY	✗	78%	✗
4	MANDEV'S ONE END EXPANDED TUBES CAN REDUCE 100% COST BY ELIMINATING THE USE OF ELBOW ACR APPLICATION	✗	100%	✗
5	9 ELEMENT SECURED HOLOGRAM (FOIL STICKER), FIXED ON THE TUBES & COIL	<p>3 Nos Of Golden Color Hologram Fix On Coil. Two are Both End 1 Feet Distance and another one on center of coil on approx 7.62 mtr distance.</p> 	<p>2 Nos Of Golden Color Hologram Fix On Both End Of The Tube With 1 Feet Distance.</p> 	<p>3 Nos Of Silver Color Hologram Fix On Coil. Two are Both End 1 Feet Distance and another one on center of coil on approx 7.62 mtr distance.</p> 
6	INKJET MARKING ON STRAIGHT TUBES AND COILS	✓	✓	✗
7	END CAP WITH YELLOW/PINK COLOR AND MANDEV ENGRAVED LOGO			
8	MANDEV PRINTED POLYTHENE BAGS WITH VARIOUS SECURITY ELEMENTS	✓	✓	✓
9	FOR TRACKING & CONFIRMING AUTHENTICITY, TRACEABILITY & 100% RELIABILITY CHECK. (I) MANDEV PROVIDE TEST CERTIFICATE HARD COPY (ORIGINAL WITH HOLOGRAM) MENTIONING BATCH NO., BILL NO., DATE AND FULL QUANTITY. OR (II) MANDEV'S STOCKIEST'S WILL PROVIDE MANDEV TUBES TEST CERTIFICATE (ENDORSED) WITH THEIR CO'S SEAL (STAMP) AND DULY SIGNED BY THEIR DIRECTOR/PROPRIETOR.	✓	✓	✓
10	WEIGHT OF PRODUCT	PLEASE FIND SPECIFICATION WEIGHT CHART		
11	MANDEV'S BRANDED PACKAGING MATERIAL i.e. (1) CORRUGATE BOX/SHEET PACKAGING MATERIAL. (2) CELLO TAPE (3) STRAPPING PLASTIC TAPE	BOX	SHEET	BOX

KINDLY NOTE : FOR ALL AIR CONDITIONING FITTING GOLDEN HOLOGRAM WILL BE APPLICABLE & FOR MEDICAL GRADE COPPER FITTINGS SILVER HOLOGRAM WILL BE APPLICABLE

OUR TREASURED CLIENTS

(BUILDERS)



(OEM's)



(METRO PROJECTS)



ASSOCIATIONS, MEMBERSHIP AND CERTIFICATIONS





Copper tubes to paint your world green



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