

JK TUBE Co.



We are delighted at the opportunity of becoming an integral part of your business success.

Here we represent our selves as part of group, it may seem very different to you but the management of our group believes in the individuality. Which means functioning individually and leading individually in there respected fields.

We are confident you will be entirely satisfied by the quality of our products & request you to kindly approve & use '**AKG**' make Rigid Steel Conduits for all your ongoing and upcoming projects.

So here we represent ourselves with our profile and details.



Dear Sir,

We take this opportunity to introduce ourselves as manufacturer of 'AKG' make rigid steel conduit with ISI mark of Bureau of Indian Standards, Manak Bhawan, New Delhi. In this regard we are pleased to furnish following details / documents for your kind perusal.

- ✚ **Product & Range** : Black Stove Enameled & Hot Galvanized Rigid Steel Conduits in 20mm, 25mm, 32mm, 40mm & 50mm O.D. Sizes.
- ✚ **Plant & Machinery** : As per annexure enclosed herewith.
- ✚ **Testing Measuring Instrument** : As per annexure enclosed herewith.
- ✚ Detailed **Product Catalog** is enclosed herewith.
- ✚ Photocopy of **ISI License**.
- ✚ **Details of projects** where 'AKG' Rigid Steel Conduits have been used is enclosed herewith.

- ✚ Following important Technical annexure in respect of rigid steel conduit.
 - a) Explanatory Note of Internal Bead.
 - b) Blue Colored Spot Test details in respect of medium Protective Coating.
 - c) Copper Deposition Test details in respect of Heavy Protective Coating.
- ✚ Approvals / Performance Certificate from various dept. / customers is enclosed herewith.

We are confident you will be entirely satisfied by the quality of our products & request you to kindly approve & use '**AKG**' make Rigid Steel Conduits for all your ongoing and upcoming projects.

Looking forward to your kind patronage.

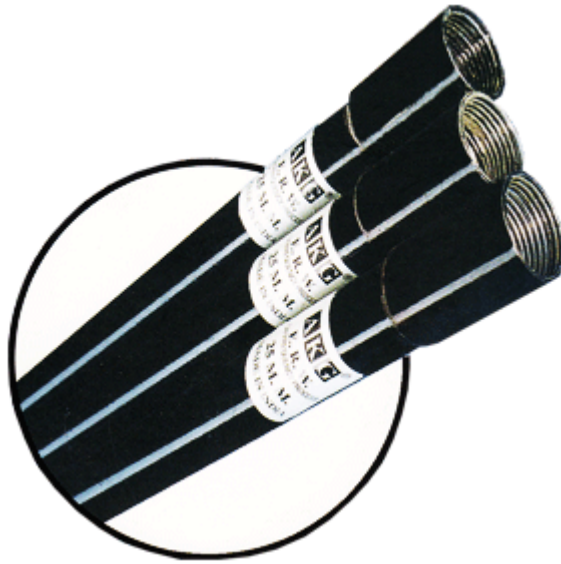
Thanking You,
Yours faithfully ,
For J.K. Tube Co.

AKG ERW Rigid Steel Conduits

Made from the best quality mild steel using the most modern high frequency Induction Tube Welding (Electric Resistance Welding) Technology, AKG rigid Steel Pipes are available in sizes from 20mm to 50mm with two types of protective coatings against external influences.

Our Product Range Includes:

- Stove Enameled for Medium Protection. (Both Inner & Outer Surfaces)



- Hot Dip Galvanized for Heavy Protection. (Both Inner & Outer Surfaces)



PRODUCT CATALOG – CONDUIT PIPES



Technical Details:

AKG RIGID STEEL CONDUITS MADE TO IS: 9537 (PT-II) 1981 SPECIFICATIONS DIMENSIONAL REQUIREMENTS

NOMINAL SIZE IN MM	20	25	32	40	50
Outside Diameter (mm)	20	25	32	40	50
Tolerance on outside diameter (mm)	-0.30	-0.40	-0.40	-0.40	-0.50
Minimum Outside diameter (mm)	19.70	24.60	31.60	39.60	49.50
Wall Thickness					
(a) Minimum (mm)	1.40	1.40	1.40	1.60	1.60
(b) Maximum (mm)	1.60	1.80	1.80	2.20	2.20

MAXIMUM CAPACITY OF AKG BRAND RIGID STEEL CONDUITS FOR DRAWING PVC INSULATED CABLES CONFORMING TO IS: 694-1990

SIZE OF CONDUIT	20 mm	25 mm	32 mm	40 mm	50 mm
NOMINAL SIZE IN MM	NUMBER OF CABLES				
1.5	4	6	10	---	---
2.5	4	6	10	---	---
4	3	5	10	---	---
6	2	3	7	14	---
10			5	11	---
16			3	7	---
25				4	6
35				4	6
50				3	5

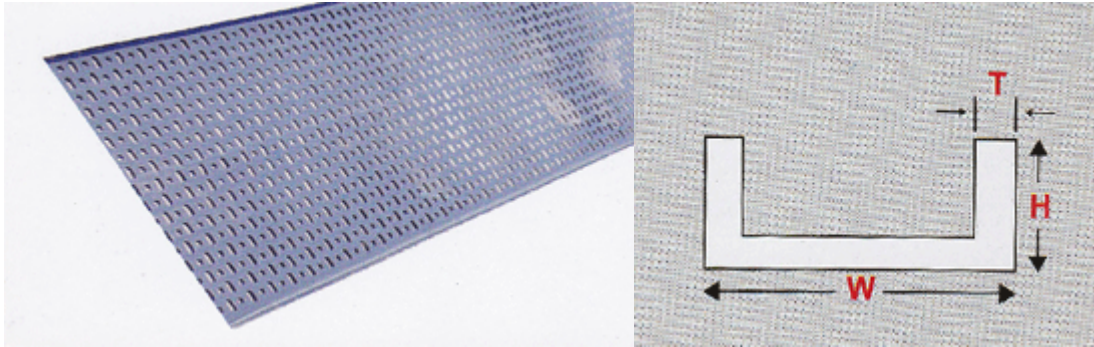
PRODUCT CATALOG - CABLE TRAYS



We are into manufacturing AKG M.S. Cable Trays, AKG Designs & Manufacture Cable Trays for various Industries: Gas Companies, Oil Field, Malls, Petrochemicals, Power Plants and Metro Railway etc.

Our Product Range Includes:

PERFORATED CABLE TRAY



Technical Details:

H		W		H		T	
20	X	50	X	20	1 mm - 2 mm		
20	X	75	X	20	1 mm - 2 mm		
20	X	100	X	20	1 mm - 2 mm		
20	X	150	X	20	1 mm - 2 mm		
20	X	200	X	20	1 mm - 2 mm		
20	X	300	X	20	1 mm - 2 mm		
20	X	450	X	20	1 mm - 2 mm		
20	X	600	X	20	1 mm - 2 mm		
25	X	50	X	25	1 mm - 2 mm		
25	X	75	X	25	1 mm - 2 mm		
25	X	100	X	25	1 mm - 2 mm		
25	X	150	X	25	1 mm - 2 mm		
25	X	200	X	25	1 mm - 2 mm		
25	X	300	X	25	1 mm - 2 mm		
25	X	450	X	25	1 mm - 2 mm		
25	X	600	X	25	1 mm - 2 mm		

PRODUCT CATALOG - CABLE TRAYS



40	X	75	X	40	1 mm - 2 mm
40	X	100	X	40	1 mm - 2 mm
40	X	150	X	40	1 mm - 2 mm
40	X	200	X	40	1 mm - 2 mm
40	X	225	X	40	1 mm - 2 mm
40	X	250	X	40	1 mm - 2 mm
40	X	300	X	40	1 mm - 2 mm
40	X	450	X	40	1 mm - 2 mm
40	X	600	X	40	1 mm - 2 mm
40	X	750	X	40	1 mm - 2 mm
50	X	100	X	50	1 mm - 2 mm
50	X	150	X	50	1 mm - 2 mm
50	X	200	X	50	1 mm - 2 mm
50	X	300	X	50	1 mm - 2 mm
50	X	450	X	50	1 mm - 2 mm
50	X	600	X	50	1 mm - 2 mm
50	X	750	X	50	1 mm - 2 mm
50	X	900	X	50	1 mm - 2 mm
50	X	1000	X	50	1 mm - 2 mm
75	X	300	X	75	1 mm - 2 mm
75	X	450	X	75	1 mm - 2 mm
75	X	600	X	75	1 mm - 2 mm
75	X	900	X	75	1 mm - 2 mm
75	X	1000	X	75	1 mm - 2 mm

Note:

All sizes are standard, any sizes can be offered

- Width from 50 mm to 1000 mm
- Thickness from 1 mm to 2 mm

ABBREVIATIONS

W - Width of Tray

B - Bend

T - Thickness of Sheet

L - Length of Tray

R - Radius of Curve

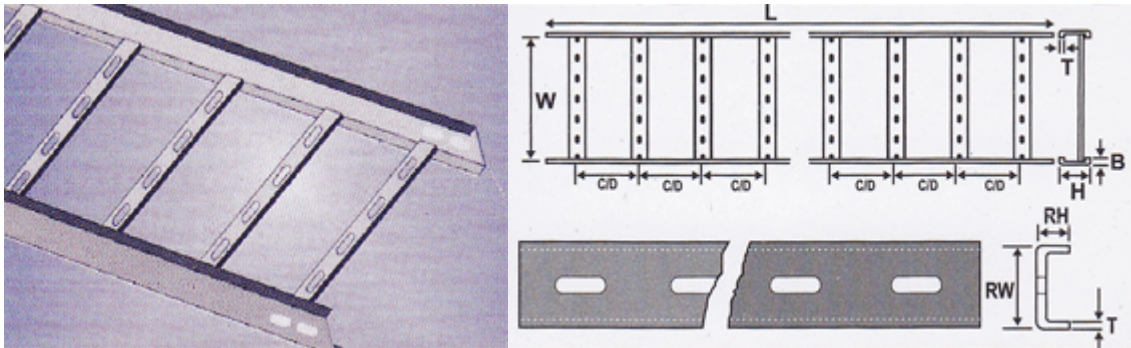
H - Height of Tray

RH - Rung Height

RW - Rung Width

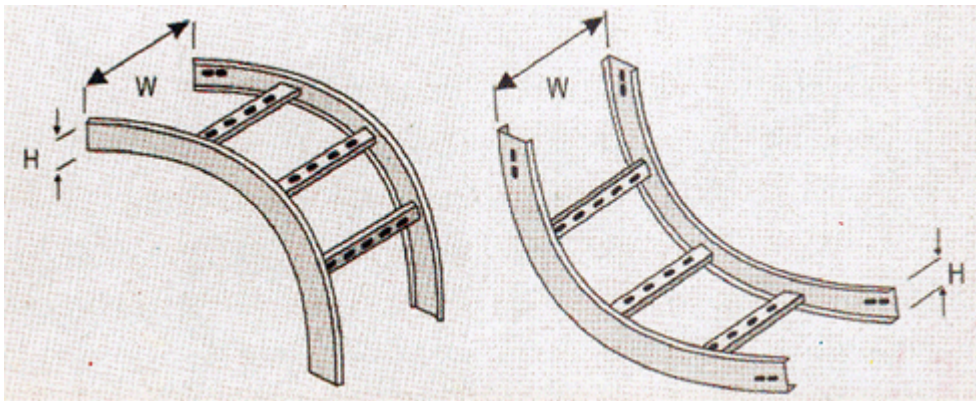
C/D - Centre to Centre distance between rungs

AKG Ladder Type Cable Trays



- 1. Width from 150 mm to 1000 mm
- 2. Height from 40 mm to 100 mm
- 3. Thickness from 1.2 mm to 2.0 mm

LADDER TYPE OUTSIDE/INSIDE RISERS

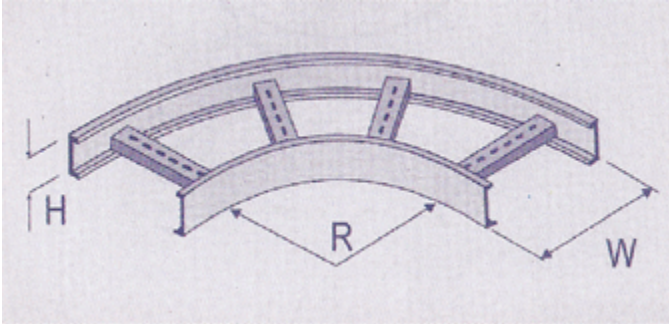


- 1. Width from 100 mm to 1000 mm
- 2. Height from 40 mm to 100 mm
- 3. Thickness from 1.2 mm to 2.0 mm

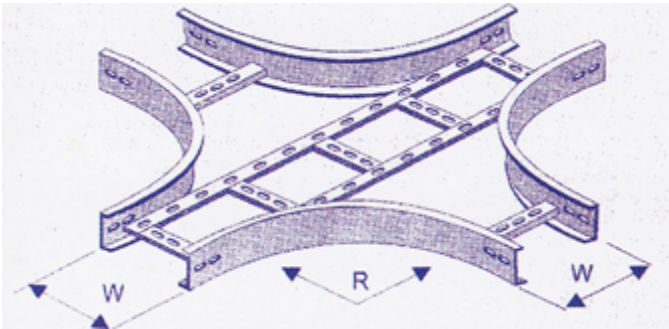
PRODUCT CATALOG - CABLE TRAYS



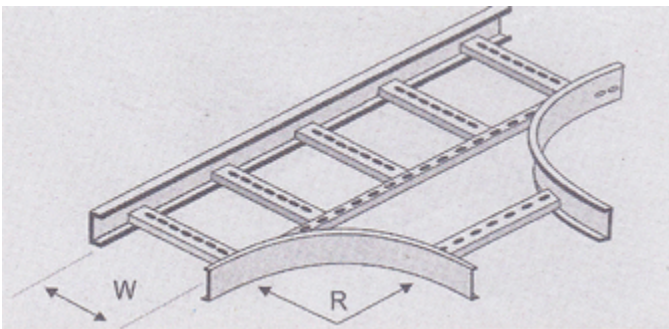
LADDER TYPE OUTSIDE/INSIDE RISERS



LADDER TYPE CROSS



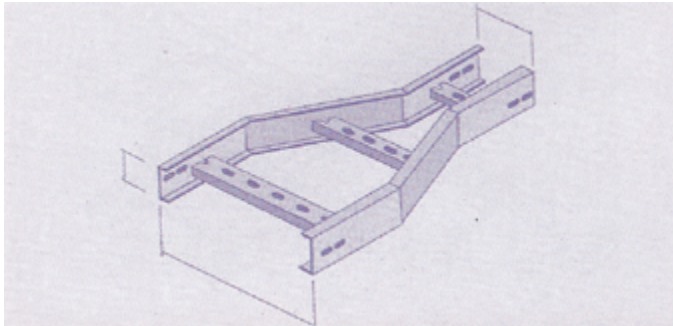
LADDER TYPE TEE



PRODUCT CATALOG - CABLE TRAYS



LADDER TYPE REDUCERS



Technical Details:

H		W		H		T	
40	X	150	X	40	1.2 mm - 3 mm		
40	X	300	X	40	1.6 mm - 2 mm		
50	X	150	X	50	1.6 mm - 2 mm		
50	X	300	X	50	1.6 mm - 2 mm		
50	X	450	X	50	1.6 mm - 2 mm		
50	X	600	X	50	1.6 mm - 2 mm		
75	X	300	X	75	1.6 mm - 2 mm		
75	X	450	X	75	1.6 mm - 2 mm		
75	X	600	X	75	1.6 mm - 2 mm		
75	X	750	X	75	1.6 mm - 2 mm		
100	X	300	X	100	1.6 mm - 2 mm		
100	X	450	X	100	1.6 mm - 2 mm		
100	X	600	X	100	1.6 mm - 2 mm		
100	X	750	X	100	1.6 mm - 2 mm		
100	X	900	X	100	1.6 mm - 2 mm		
100	X	1000	X	100	1.6 mm - 2 mm		

Note: All sizes are standard, any sizes can be offered

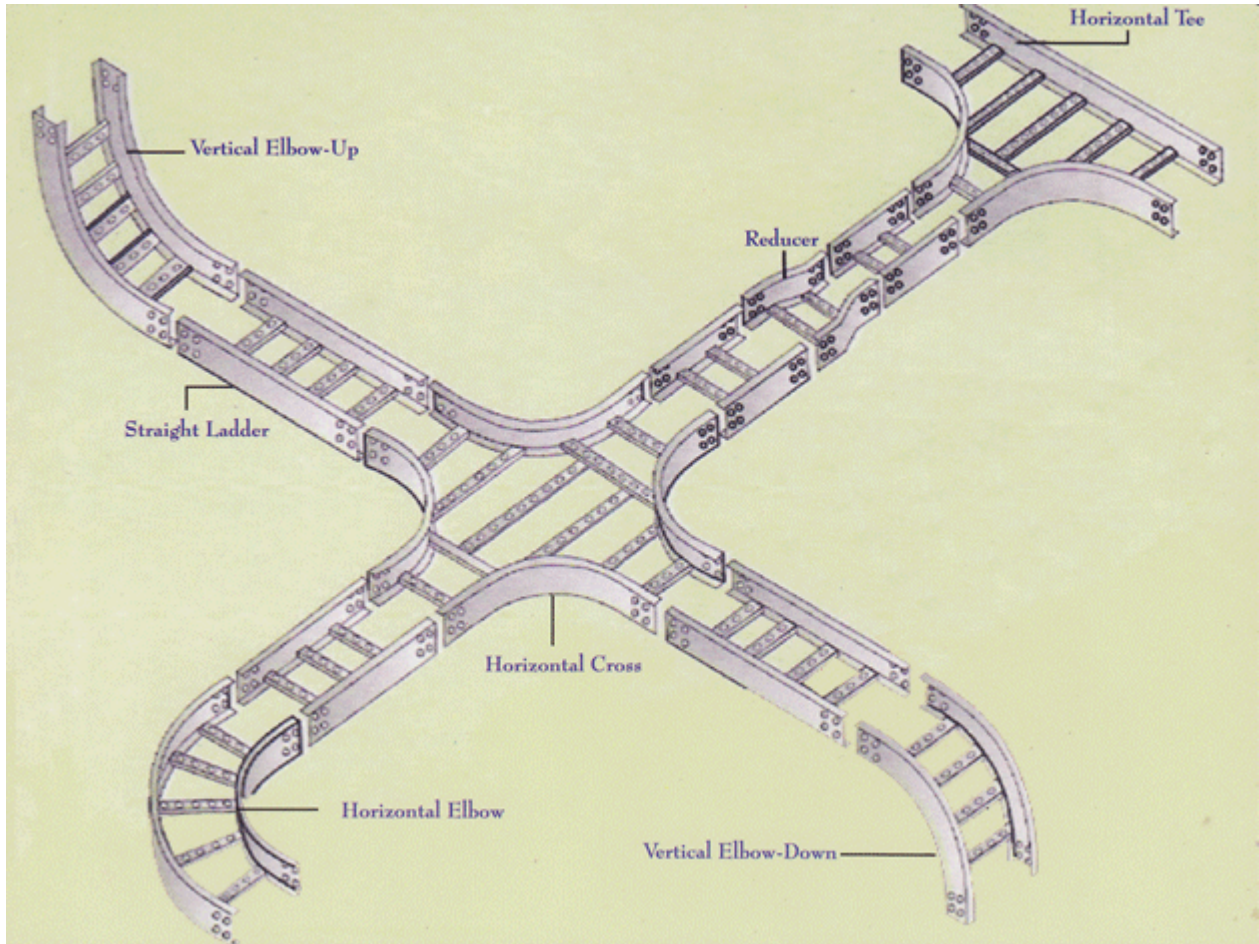
- Width from 100 mm to 1000 mm
- Thickness from 1.2 mm to 3 mm

ABBREVIATIONS

- W** - Width of Tray
- B** - Bend
- T** - Thickness of Sheet
- L** - Length of Tray
- R** - Radius of Curve

- H** - Height of Tray
- RH** - Rung Height
- RW** - Rung Width
- C/D** - Centre to Centre distance between rungs

Cable Tray Assembly System

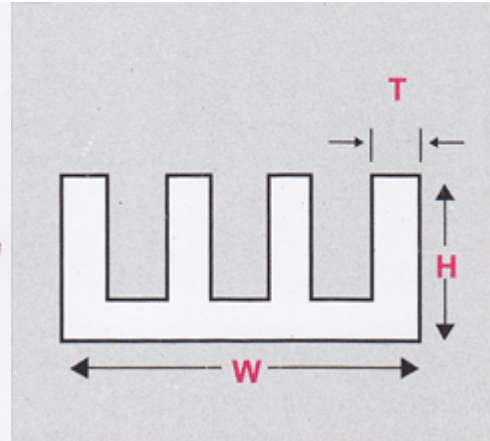
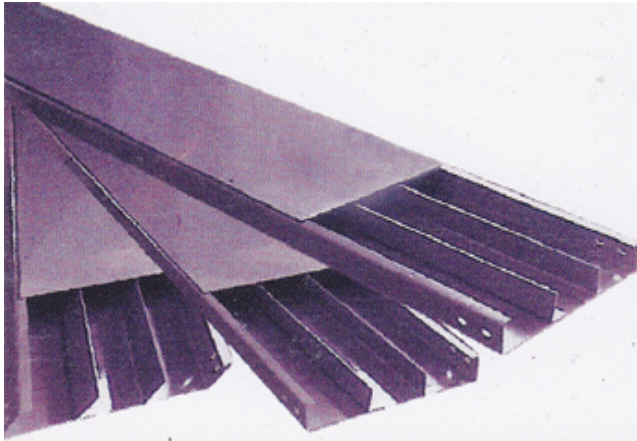


ACCESSORIES FOR CABLE TRAYS

- Nuts, Bolts & Washers - Covers
- Horizontal Elbow - Vertical Elbow
- Hanger Clamps - Horizontal Tee
- Wall Brackets - Coupler Plates
- Cross - Reducer
- Inward Band & Return Flange Cable Trays

- Straight Flange Perforated Cable Trays
- Ladder Type 90° & 45° Bend
- Ladder Type Cross
- Ladder Type Inside Risers
- Ladder Type Outside Risers
- Ladder Type Tee
- Ladder Type Reducer etc.

Raceways



1. Width from 100 mm to 1000 mm
2. Height from 50 mm to 100 mm
3. Thickness from 1.0 mm to 2.0 mm

LIST OF PLANT AND MACHINERY

S.No.	NAME OF MACHINERY	QUANTITY
1.	Tube Mill	1 Nos.
2.	H. F. Tube Welder	1 Nos
3.	End facing Machine	2 Nos
4.	Threading Machine	2 Nos
5.	Painting Tank	2 Nos
6.	Tube Straightening Device	1 Nos
7.	Electric Furnace	1 Nos
8	Lathe Machine	1 Nos
9.	Drill Machine	1 Nos
10.	Misc. Tools etc	

LIST OF TESTING EQUIPMENTS

S.No.	NAME OF EQUIPMENT	MANUFACTURER'S NAME	RANGE	SERIAL NO.	LEAST COUNT / ACCURACY
1.	DIGITAL VERNIER	LINKS	0 – 15 MM	E 264	0.01 MM
2.	MICROMETER	-DO-	0 – 25 MM	A 163	0.01 MM
3.	MEASURING TAPE	FREEMANS	0 – 10 MM	---	1.0 MM
4.	MAXIMUM O.D. GAUGES (GO GAUGE)	PROLIFIC	20, 25, 32,40 & 50 MM		
5.	MINIMUM I.D. GAUGES (NO TO GAUGE)	PROLIFIC	20, 25, 32,40 & 50 MM		
6.	MINIMUM I.D. GAUGE	PROLIFIC	20 & 25 MM		
7.	BENDING TEST SET COMPLETE	PROLIFIC	20 & 25 MM		
8.	COMPRESSION TEST SET COMPLETE	PROLIFIC			
9.	ISO METRIC THREAD GAUGE (GO)	SIZE CONTROL	20, 25, 32,40 & 50 MM		
10.	ISO METRIC THREAD GAUGE (NO GO)	SIZE CONTROL	20, 25, 32,40 & 50 MM		
11.	LABORATORY CHEMICALS				

12.	LABORATORY GLASSWARE SUCH AS BEAKERS, FLASKS TEST TUBES ETC.				
13.	THERMOMETER		(-10 to +50)		
14.	HYDROMETER	AMBER	1000 TO 2000		
15.	WEIGHING BALANCE		2g TO 5kg.	2 g	
16.	PHYSICAL BALANCE	UNITECH	1mg TO 200g.	1 mg	
17.	ANALYTICAL WEIGHT BOX	--DO--	1mg TO 100 g.		
18.	AIR CONDITIONER	THERMOKING	1.5 TONS		
19.	MEASURING SCALE	SHARP	1000 MM		0.05 MM
20.	MEASURING SCALE	K.T.C.	0 – 300 MM		0.05 MM
21.	TRAVELLING MICROSCOPE		0 – 150 MM VERTICAL 0 – 180 MM HORIZONTAL		0.01 MM

LIST OF PROJECTS WHERE OUR PIPES HAVE BEEN USED

S.NO.	NAME OF PROJECT
1.	Indian Oil Corporation Ltd. Faridabad.
2.	Maruti Udyog Ltd. Gurgaon.
3.	L.I.C. of India, Ludhiana.
4.	American Embassy, Chanakyapuri, New Delhi
5.	Krishi Anusandan Bhawan, Pusa Institutional Area, Pusa Road, New Delhi.
6.	P.G.I. Hospital, New O.P.D. Block, Chandigarh.
7.	Mathura Refinery, Gate No. 09, Mathura.
8.	Chamble Fertilizers Ltd., Gadepan, Rajasthan.
9.	Times House, Site IV, Indl. Area, Sahibabad.
10.	National Co-operative Union of India, Siri Institutional Area, New Delhi111
11.	Hotel Marina, Agra (U.P.)
12.	Mehta Research Institute Allahbad.
13.	N.T.P.C. Noida (U.P.)
14.	M.P.S.E.B. (Madhya Pradesh)
15.	A.I.I.M.S. New Delhi.
16.	Apollo Hospital, Sarita Vihar, Mathura Road, New Delhi.

17.	Siemens Limited
18.	Rashtriya Sahara.
19.	Apeejay School, Noida.
20.	Onida C.T.V., B – 134, Noida Phase – II.
21.	Panipat Thermal Power Plant.
22.	Safdar jang Hospital, New Delhi.
23.	Escorts Heart Institute, New Delhi / Faridabad.
24.	Bharat Petroleum Corporation, Greater Noida.
25.	Reserve Bank Of India, New Delhi.
26.	State Bank Of India, New Delhi.
27.	I.I.T. Guwahati.
28.	Hero Honda Motors, Gurgaon.
29.	Taj Hotel, Jodhpur.
30.	Delhi Metro Rail Corporation Project. <ul style="list-style-type: none">• DMRC Metro Bhawan• DMRC Station Shastri Park• DMRC Station Shahdara Park• DMRC Station Central Sectrate IMCC, Under Ground• DMRC Station Tilak Nagar• DMRC Station Nazafgarh• DMRC Station Seelampur• DMRC Station Ramesh Nagar, Moti Bagh etc.

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31.	BSES Ltd, Noida and Indore
32.	Nathpa Jhakri Power Corporation Ltd. Himachal Pradesh.
33.	NTPC Talchar, Orissa.
34.	Apollo Hospital Ludhiana Punjab.
35.	Apollo Hospital, Gandhi Nagar, Gujarat.
36.	Larsen And Toubro Ltd.
37.	Punjab Institute Of Medical Science, Jalandhar.
38.	Airport Authority Of India Pathankot.
39.	Airport Authority Of India Jabalpur.
40.	Tehri Hydro Project at Tehri Garhwal, Uttaranchal.
41.	NTPC Sipat.
42.	NTPC Kahailgaon.
43.	Bharat Sanchar Nigam Ltd.
44.	World Bank Building, Chennai.
45.	HCL Technologies.
46.	General Hospital, Chennai.
47.	TCS, Chennai.
48.	Hyundai Motors, Chennai.
49.	Satyam Computers, Chennai.

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50.	C.O.T.S., Chennai.
51.	DLF IT Park, Chennai.
52.	Tata Honeywell Technology, Bangalore.
53.	Mesteck Chennai.
54.	Mangalore Airport (Mangalore).
55.	Delhi International Airport (Delhi).
56.	Mumbai International Airport (Mumbai).

EXPLANATORY NOTE ON FORMATION OF INTERNAL BEAD

The internal bead results from induction tube welding process along the line of the welding. Here it is clarified that the induction tube welding process is more commonly known as Electric Resistance Welding (ERW). In fact during the formation of tube at the tube mill, the bead information occurs on both the side outer & inner surfaces along the line of ERW welding. While the bead on external surface is removed on line with the help of tool bits the same can not be done on internal surface for obvious reasons & as a consequence of the welding process there is formation of internal bead which can not be eliminated completely. Not only this, optimum internal bead is highly desirable for the weld strength along the line of welding. However, the size of internal bead can be controlled by the following methods.

- a) Appropriate pressure of weld rolls at the time of welding.
- b) Appropriate width & thickness of steel strip.

Further we would like to state categorically that the internal bead can not be removed altogether & samples apart, AKG rigid steel conduits have the minimum internal beads. As far as samples of length varying from 8'' to 10'' are concerned one can manually remove it upto a limited distance of 3'' to 4'' by using a file & can be falsely claim that the conduit do not have internal beads just to mislead the electrical consultants / architects. This fact can be verified at any time by actually taking a three meter length. Most likely it will be there & in case it is totally not there, then we are afraid, the weld strength is poor in this particular length of conduit. This fact also can be verified by flattening the tube by hammering (Tube Flattering Test) & checking the weld strength.

Further we would like to draw your kind attention to page no. 9 & clause no. 8.2 of IS : 9537 part – I which is reproduced below for your kind attention.

A slight burr resulting from method of manufacturing is not taken into account if it is not likely to damage insulated conductors.

So do not look for the internal bead in the samples but look for the internal bead only at the pipe of the 3 meter length by cutting the length of conduit at the middle as illustrated hereinabove.

TEST FOR CHECKING THE EFFECTIVENESS IF BLACK STOVE ENAMELLED COATING ON RIGID STEEL CONDUITS AS PER IS : 9537 PART – II SPECIFICATIONS

BLUE COLOURED SPOTS TESTS

- ✚ Black stove enameled coating on rigid steel conduits falls under medium protection type coating as is clear from clause 5-1 note 2(i) on Page No. 5 of IS : 9537 (Part - 2) – 1981 specifications.
- ✚ Chemicals required for carrying out tests for stove enameled Coatings are as under : -
 - a) Benzene .
 - b) 0.75% Potassium Ferricyanide [$K_3 Fe(CN)_6$] in water.
 - c) 0.25% Ammonium Persulphate in water.
 - d) 0.2% wetting agent eg Alkyl naphthalene Sulphuric Acid.
- ✚ The test for testing the stove enameled coating on rigid steel Conduit is commonly known as coloured spot tests.
- ✚ After the test the lot is certified CONFORM if the tested samples show not more than two blue coloured spot on each sq. cm. of surface & no spot shall have a dimension greater than 1.5 mm.

However traces of rust on sharp edges & scew threads & yellowish film removable by rubbing shall be ignored.

(These tests are available in our lab at our works)

**TEST FOR CHECKING THE EFFECTIVENESS OF HOT DIP GALVANISING COATING ON
RIGID STEEL CONDUITS AS PER
IS : 9537 PART – II SPECIFICATIONS**

(COPPER DEPOSITION TEST)

- ✚ Hot dip galvanizing coating on rigid steel conduits falls under the category of heavy protection as is clear from clause 5-1 note 3 part (I) mentioned on page no. 5 of IS : 9537 (Part – II) – 1981 specifications.
- ✚ Chemicals & equipment required for copper deposition test are as under :
 - a) Carbon Tetra Chloride
 - b) 2% Solution of Sulphuric Acid
 - c) Crystalline Copper Sulphate
 - d) Copper Carbonate or Copper Hydraulic
 - e) 10% Solution of Hydrochloric Acid
- ✚ Testing of hot dip galvanizing coating for external influences is carried out as per provisions given in clause 13 page no. 16 of IS : 9537 (Part – I) – 1980 & the test is commonly known as copper deposition as detailed on page 17 vide clause 13.4.5 of IS : 9537 (Part - I) – 1980.
- ✚ After carrying out the tests as per provisions of aforesaid clause no 13.4.5 the lot is certified to conform if the samples show no deposition of copper which can not be scrubbed off in running water after immersion for 15 seconds in 10% Hydraulic Acid. However copper deposition in traces on screw threads is to be ignored.

(These tests are available in our lab at our works)

LIST OF APPROVALS / PERFORMANCE CERTIFICATES

S. No.	PARTICULARS	No.
1.	Senior Engineer (Electrical) I.I.T Kanpur	Annexure – 1
2.	Uttar Pradesh Rajikiya Nirman Nigam Ltd.	Annexure – 2
3.	Chief Engineer Military Engineering Services (M.E.S.)	Annexure – 3
4.	Chief Engineer (Electrical) P.W.D. Mumbai	Annexure – 4
5.	Office of The Chief Engineer P.W.D. Capital Zone M.P. Bhopal	Annexure – 5
6.	Renu Sagar Power Division, Renu Sagar (U.P.) The Indore.	Annexure – 6
7.	Airports Authority of India	Annexure – 7
8.	C.P.W.D. , New Delhi	Annexure – 8
9.	Indian Oil Corporation	Annexure – 9
10.	Pre Despatch Inspection Report of NTPC, Vindhyachal Super Thermal Power Project	Annexure – 10
11.	Performance Certificate from Life Insurance Corporation of India, New Delhi	Annexure – 11

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12.	Performance Certificate from Larsen Toubro Ltd.	Annexure - 12
13.	Performance Certificate from Reunion Engineering Co. Ltd. Bombay.	Annexure - 13
14.	Rayco Engineering Syndicate	Annexure - 14
15.	Naptha Jhakri Power Corpn. Ltd.	Annexure - 15
16.	Department of Atomic Energy, Mumbai	Annexure - 16
17.	Tehri Hydro Development Corp. Ltd. (T.H.D.C. Ltd.)	Annexure - 17
18.	Bharat Sanchar Nigam Ltd.	Annexure - 18
19.	Superintending Engineer (E) S&S C.P.W.D., New Delhi	Annexure - 19

VARIOUS OTHER DOCUMENTS



Click on the below list see the respective documents:

1. [List of approved makes of materials](#)
2. [Certificate of Uttar Pradesh Rajkiya Nirman Nigam Ltd.](#)
3. [Annexure III](#)
4. [Annexure IV](#)
5. [Annexure V](#)
6. [Annexure – Indure Limited](#) – Pg1
7. [Annexure – Indure Limited](#) – Pg2
8. [Annexure – Indure Limited](#) – Pg3
9. [Annexure VII – Tender Document \(Airports Authority of India\)](#) - Pg1
10. [List of approved makes](#) – Pg 2
11. [Annexure VIII – CPWD New Delhi](#) – Pg 1
12. [List of approved makes](#) – Pg 2
13. [Annexure IX – Indian Oil Corporation Limited](#) – Pg1
14. [List of approved manufactures](#) – Pg 2
15. [List of approved manufactures](#) – Pg 3
16. [Annexure XI - LIC](#)
17. [Annexure XII – Larsen & Turbo Ltd.](#)
18. [Annexure 13 – Reunion Engineering Co. Ltd.](#)
19. [Annexure 14 – Rayco Engineering Syndicate](#)
20. [Tehri Hydro Development Corporation Ltd.](#)
21. [Naptha Jhakri Power Corporation Ltd.](#)
22. [National Thermal Power Corporation Ltd.](#)
23. [Bureau of Indian Standards](#)
24. [Bharat Sanchar Nigam Ltd.](#)
25. [Department of Atomic Energy](#)
26. [NTPC Ltd – Dispatch Clearance Certificate](#)
27. [Govt India – Electrical Department](#)
28. [Bureau of Indian Standards – II](#)
29. [Bureau of Indian Standards - III](#)