

EN45545-2 R22(HL2), R23(HL3) Flame Test Certification Acquired!



- Oxygen index to T01 EN ISO 4589-2
- Flue gas density to T10.03 EN ISO 5659-2
- Oxygen index to T12 NF X70-100-1 and 2



Test Method

- ① Measure time of Carbonized Length, Area and Flame stayed
- ② Measure burning time based on certain length of tube
- ③ Measure value of smoke concentration
- ④ Measure existence of toxic gases and its degree
- ⑤ Measure value of oxygen concentration that is required to combust



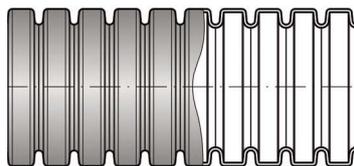
Ordering

PAH T -10B : 100M Black and Gray is a basic color. Different color of tube can be supplied according to customer's request.

- **Q'ty (m)**
- **Color** B : Black / G : Gray
U : Ultraviolet Block (Black only)
- **Size** (07, 10, 12, 16, 22, 28, 36, 48, 56, 70, 95)

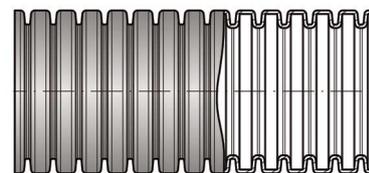
Type of Pitch

Standard Pitch: Excellent Pull-out Performance



Standard Pitch

Narrow Pitch: Excellent Flexibility Performance



'T' follows after model name

- * CPS / PAH / RAH / PAM / PAR 사양에 적용
- * Size (22, 28, 36, 48)

- **Type** (CPS / PAH / RAH / PES / CPSS / PAHS / PESS / PAR / PAM / RAH12)



Major customer for machine tools



Major customer for railroad cars



Eco-Friendly

All products of CP SYSTEM CO.,LTD comply with RoHS Regulation.



Restriction of the use of Specific Pollutants (RoHS)

RoHS stands for Restriction of Hazardous Substances, and impacts the entire electronics industry and many electrical products as well. The original RoHS, also known as Directive 2002/95/EC, originated in the European Union in 2002 and restricts the use of six hazardous materials found in electrical and electronic products. All applicable products in the EU market since July 1, 2006 must pass RoHS compliance.

The substances banned under RoHS are lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (CrVI), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), and four different phthalates (DEHP, BBP, BBP, DIBP).

IM Beauty	RoHS(2002/95/EC)	RoHS II(2011/65/EU)
Time of Application	1 July 2006	2 Jan. 2013
Product Family	5 EEE products among 10 EEE products	All Electrical and Electronic Equipment - Medical device, Observation/Control Instrument(After 22 July 2014) - Medical device(After 22 July 2016) - Observation/Control Instrument - Electrical/Electronic Equipment except for 10 EEE products
CE Marking	N/A	CE Marking Compulsory
Performance of obligation Party	No Legal Provision	Performance of obligation Regulation to Manufacturer, Importer, Distributor
Technical Document	Recommended	Compulsory (EN 50581)

AE) Other harmful substance except for RoHS – Halogen Free (Br, Cl, F, I, AE)

Halogens are a group in the periodic table consisting of five chemically related elements: fluorine (F), chlorine (Cl), bromine (Br), iodine (I), and astatine (At).

Halogen-free, a substance must consist of less than 900 parts per million (ppm) of chlorine or bromine and also have less than 1500 ppm of total halogens.

Green Peace emphasizes harmfulness of Halogen substance and publish grade of each enterprise by conducting Green Peace Self Evaluation.

Reliability Test Verification



Test of Compression and Decompression (IEC 61386)

1. Measure outer dia. of 200mm long tube at 23°C temperature before conducting test.
2. Place specimen between flat plate and compression plate.
3. Compress specimen gradually for 30 seconds based on designated compression value. And then, compress specimen for 60 sec. again and check value of deformation. It must not exceed 25% of deformation in regard to outer diameter from initial status.
4. Remove specimen from the plates and leave it for 60 seconds. And then measure its outer diameter of specimen again. It must not exceed 10% of deformation in regard to outer diameter from initial status.



Impact Test after keeping Low Temperature (IEC 61386)

1. Give impact to the center position of or the weakest position of flexible tube by using standard hammer.
2. Give impact to the other flexible tube that is exactly a same spec. after putting it into a low temperature chamber.
3. There must not any mark of deformation or split at those 2 specimens above.



Pulling-Out Test (UL 1696)

1. Connect 500mm long flexible tube and connector and fix them to fixing device. Pull for 60 seconds and check its deformation value.
2. Flexible tube and Connector must not have damage after test conducted.



TENSILE TEST(IEC 61386)

1. Connect 300mm flexible tube on the fixing device. Pull for 30~40 seconds and check its deformation value after 2 minutes.
2. Flexible tube must not have damage after test..



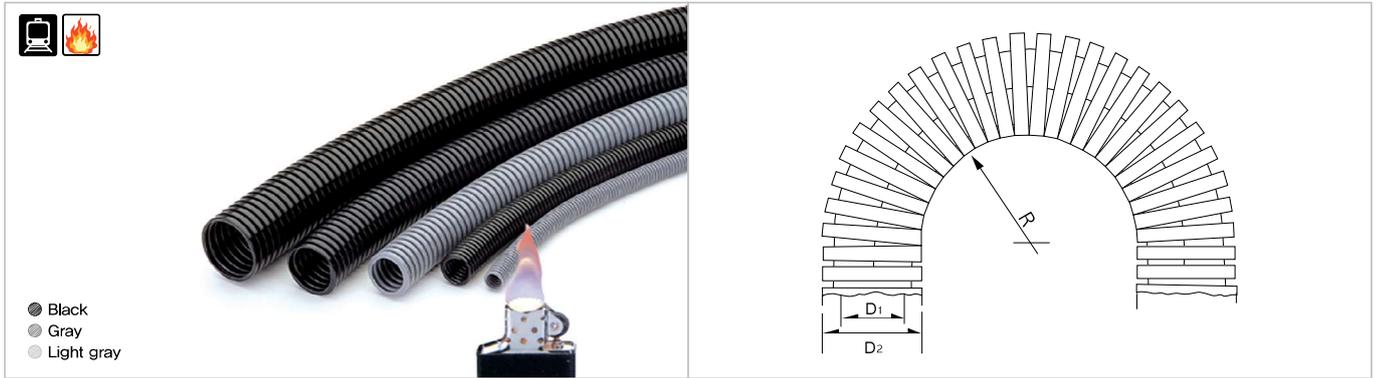
Vertical Flame Test (Self-Extinguish ability Test / UL 1696)

1. Combust 330mm long flexible tube for 15 seconds and leave it for 15 sec in the air. And then combust it for 15 seconds again.
2. After second combustion, if flame of specimen remains over 60 seconds or the tube is completely burned to ashes, it is failed. Spark must not drop at cotton ball
3. Flexible tubes must endure more than 2.5 million times bending test



Bending Test or Flexibility Test (IEC 61386)

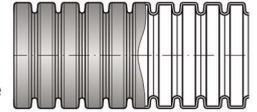
1. Bend Flexible tube to right and left direction by 90°. The tube must maintain its specified R value and there should be no deformation or split mark.
2. Flexible tubes must endure more than 2.5 million times bending test



- Material : High Quality Polyamide 6/66 (PA6/66)
- Degrees of Protection : Inside & Outside Corrugated Plastic Hose
- Construction : IP 68 acc. EN 60529
- Temperature : -40°C ~ +105°C
- Short Term : +150°C
- Self-Extinguishing : UL94-V0
- Color : Black, Gray
- Connections : CPSFIX
- Application : Railroad cars
- Certification : RS B 0175, EN45545-2 HL2(R22)/HL3(R23)

Product Size

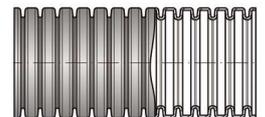
Standard Pitch : Excellent Pull-out Performance



Black	Gray	Ultraviolet Block UV-R	Inner Diameter (D1)	Outer Diameter (D2)	Bending Radius(R) mm± 10%	Packing meter / roll
RAH-07B	RAH-07G	RAH-07U	6.4	10.0	15.0	50/100
RAH-10B	RAH-10G	RAH-10U	9.6	13.0	20.0	50
RAH-12B	RAH-12G	RAH-12U	11.8	15.8	30.0	50
RAH-16B	RAH-16G	RAH-16U	15.9	21.2	40.0	50
RAH-22B	RAH-22G	RAH-22U	21.7	28.5	45.0	50
RAH-28B	RAH-28G	RAH-28U	27.8	34.5	55.0	50
RAH-36B	RAH-36G	RAH-36U	36.0	42.5	60.0	30
RAH-48B	RAH-48G	RAH-48U	46.5	54.5	70.0	30
RAH-56B	RAH-56G	RAH-56U	56.3	67.2	110.0	30
RAH-70B	RAH-70G	RAH-70U	70.0	82.5	160.0	10
RAH-95B	RAH-95G	RAH-95U	91.5	106.0	210.0	10

※ Gray Color – No certification of UL

Narrow Pitch(T) : Excellent Flexibility Performance



RAHT-22B	RAHT-22G	RAHT-22U	21.7	28.5	40.0	50
RAHT-28B	RAHT-28G	RAHT-28U	27.8	34.5	50.0	50
RAHT-36B	RAHT-36G	RAHT-36U	36.0	42.5	55.0	30
RAHT-48B	RAHT-48G	RAHT-48U	46.5	54.5	60.0	30

※ Only CE Certificate is obtained