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# ARMOUR GROUP HOLDINGS PTE LTD

“ARMOUR GROUP HOLDINGS PTE LTD IS A MAJOR DISTRIBUTOR OF AIR-CONDITIONING MATERIALS IN ASIA. THE MANAGEMENT HAS MORE THAN 35 YEARS OF VALUABLE EXPERIENCE IN THE HVACR INDUSTRY.”

# CORPORATE PROFILE



Armour Group core competencies include the supply of air-conditioning materials such as insulation, refrigerant pipe, flexible duct, ventilation fans & many more accommodating accessories. In addition, we provide project & technical consultation, presentations for project tender, sales and technical training for our partners internationally so as to equip them with in-depth knowledge.

Since incorporated in 2003, we had acquired significant recognition for the many landmark projects in which we supply materials to. We have been fortunate to tap on the growth of some other thriving industries such as Ukraine, Russia, United Kingdom, Dubai, Indonesia, Malaysia, Thailand, Brunei, Vietnam, Cambodia, India and Philippines.

Our primary focus is to develop products of the highest quality and our team of engineers & researchers are constantly seeking improvements to meet market expectations. Progressively, we built up the reliability of our trademark "Armour" and in the recent years, had successfully done so with the launch of Armour Refrigerant Aluminium Tube, Armour Flexible Duct and Armour Refrigerant Copper Tube.

These products are widely installed for applications in pharmaceutical, clean room, marine offshore, residential, commercial development and most often selected for its superior quality and the ability of these materials to work tirelessly in a challenging environment.

Our vast experience as a service provider, strategic logistic planning and the capacity to attend to our client's needs at unforeseen circumstances contributed largely to the company's success and provide a distinctive edge over many other competitors.

Thus, we enjoyed the privilege of having repeated customers by the word of mouth. With an innovative business perspective coupled with a dynamic team, we aspire to be your preferred business partner.

# WHY BUY ARMOUR REFRIGERANT ALUMINIUM TUBE

## Flexibility & Strength

- Offers more flexibility and does not link easily
- Higher wall thickness (GIG) provides better tensile strength
- Able to withstand burst pressure of more than 1000psi without sign of leakage

## Lightweight & Durable

- Requires lesser strength to bend
- Manufactured up to 15mm wall thickness providing superior rigidity
- Using the same set of bending tools as copper

## Brazing & Repair

- Fast & secured joints in less than 15s, 4 times faster than to braze copper
- No additional flux is required
- Armour Braze Rod allows up to 45-50 joints per rod ( 50cm rod)
- Uses the same method to braze copper
- No argon gas, wire spool, gloves, shield or electricity required
- Joints are stronger than main material

## Swaging & Expanding

- 30% expansion from original OD
- Using the same set of swaging tools as copper

## Burst Pressure

- Quatest (Vietnam) tested to meet ASTM B280-02 (3.4 Mpa), ASTM E 1251-99, TCVN 1832:2008 (18Mpa)
- PSB TÜV (Singapore) tested to meet ASTM B75 @ 1000PSI

## Thermal Conductivity

- Lower than copper by almost 50% which means lesser rate of condensation

## Length & Packaging

- Design to 50 metres length per coil
- Lesser joint, lesser tendency of leakage
- Longer length, lesser wastage

## Corrosion Resitsancy

- 48 hours salt water test before shipment
- Corrosion rate is very much lesser than copper
- Oxidisation rate is also lower making pipes clean and bright when exposed

## Certificates & Assurance

**ASTM B491/B491M: 2006** - Standard Specification for Aluminium and Aluminium - Alloy Extruded Round Tubes for General-Purpose Applications.  
( Test Standard scope includes refrigeration services, gas lines, oil lines and instrument lines)  
Test Report Reference : 7919107704-MECH/DI-TXM ~ 7919107704-CHMII-DZ-MCY

**Adopted ASTM B75: 2002** - Standard Specification for Seamless Copper tube  
( Hydrostatic test was done up to 1000 psi)  
Test Report Reference : 79191806-MECH\_CRI-CYW

**Adopted BS EN 248: 2002** for Corrosion Resistance Testing  
Test Report Reference : 79191007742-CHMII-PCK(MEC)

**ISO 9227: 2006** - Corrosion test in artificial atmospheres -- Salt spray test  
Test Report Reference : 79191007742-CHMII-PCK(MEC)

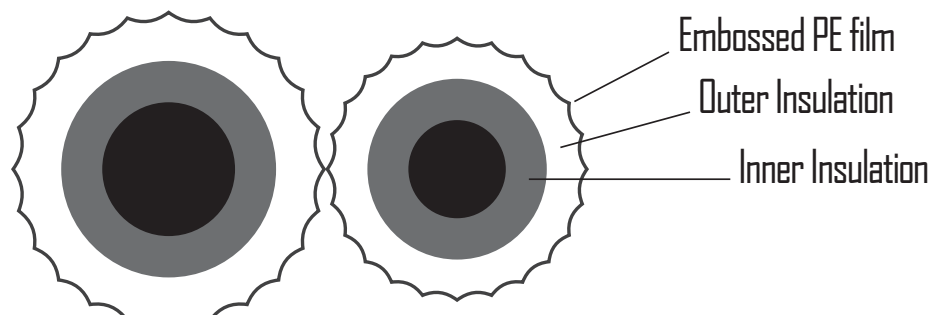
**Burst Test** with 09.52 brazing joint ( brazed with Armour brazing rod)  
(NO CRACK OR LEAK OBSERVED VISUALLY ON SEAL)  
Test Report Reference : 7919107704-MECH/D3-TXM



## Technical Specifications

Aluminium Tube Size						
Armour Item Number	Outer Diameter (inches-mm)	Wall Thickness (mm)	Carton Dimensions (cm)	Length (m)	Weight per carton (kg)	Burst Pressure (PSI)
AAC0835100	1/4" - 6.35	1.0	27 x 9 x 27	50	2.4	3900
AAC0852100	3/8" - 9.52	1.0	33.5 x 11 x 33.5	50	3.8	2400
AAC1270120	1/2" - 12.70	1.2	46.5 x 12 x 46.5	50	6.3	2000
AAC168120	5/8" - 15.88	1.2	55.5 x 12 x 55.5	50	8.2	1800
AAD1905160	3/4" - 19.05	1.5	66.5 x 11.5 x 66.5	50	12.0	1700

ARMOUR pre-insulated Aluminium Tube is carefully designed using high quality materials that is best suited for split air-conditioning installation .



## Superior Quality & Performance

The development of Armour, the first pre-insulated aluminium tube, revolutionized the market for air conditioning industry in the 21st century. It brought an end to the lengthy process of inserting insulation, gluing and taping at site saving up to 60% of time for insulation.

### Insulation:

Outer layer of insulation is manufactured with cross linking technology that enables the product to offer excellent thermal resistance.

### 100% Leak free test

Installers are backed with confidence as Armour adopts stringent process in quality checks. All tubes are pre-pumped with nitrogen gas and when cut, an oozing sound of gas signals that the tubes are 100% leak free

### Characteristic

- > R410A compliant
- > Easy to install
- > Bends easily without kinking
- > Attractive
- > No powder
- > No glue
- > Convenient packaging

## Pair Coil Specifications

Aluminium Tube Size							
Armour Item Number	Outer Diameter (inches)	OD x Wall Thickness (mm)	Carton Dimensions (cm)	Length (m)	Coils per carton	Weight per carton (kg)	Color code
AAPC08350852710	1/4" - 3/8"	6.35 x 1.0 9.52 x 1.0	72.5 x 14.5 x 72.5	20	1	5.5	
AAPC08351270110	1/4" - 1/2"	6.35 x 1.0 12.70 x 1.2	72.5 x 14.5 x 72.5	20	1	6.4	
AAPC08351588110	1/4" - 5/8"	6.35 x 1.0 15.88 x 1.2	76 x 17 x 76	20	1	7.0	
AAPC08352168110	3/8" - 5/8"	9.52 x 1.0 15.88 x 1.2	76 x 17 x 76	20	1	7.8	
AAPC083521905110	3/8" - 3/4"	9.52 x 1.0 19.05 x 1.5	76 x 17 x 76	20	1	9.8	
AAPC127101905110	1/2" - 3/4"	12.70 x 1.2 19.05 x 1.5	76 x 17 x 76	20	1	10.2	

Armour Pre-insulated Refrigerant Aluminium Tube is R410A compliant.



All information and product details contained within this document are provided as a guide only. Armour Group does not warrant that the information is accurate or without errors or omissions. Armour Group reserves the right to correct any errors or misprints. Installation shall be conducted by a fully licensed or suitably qualified air conditioning installer. +/- in O.D. Thickness and length shall be allowable.