THERMAL XR

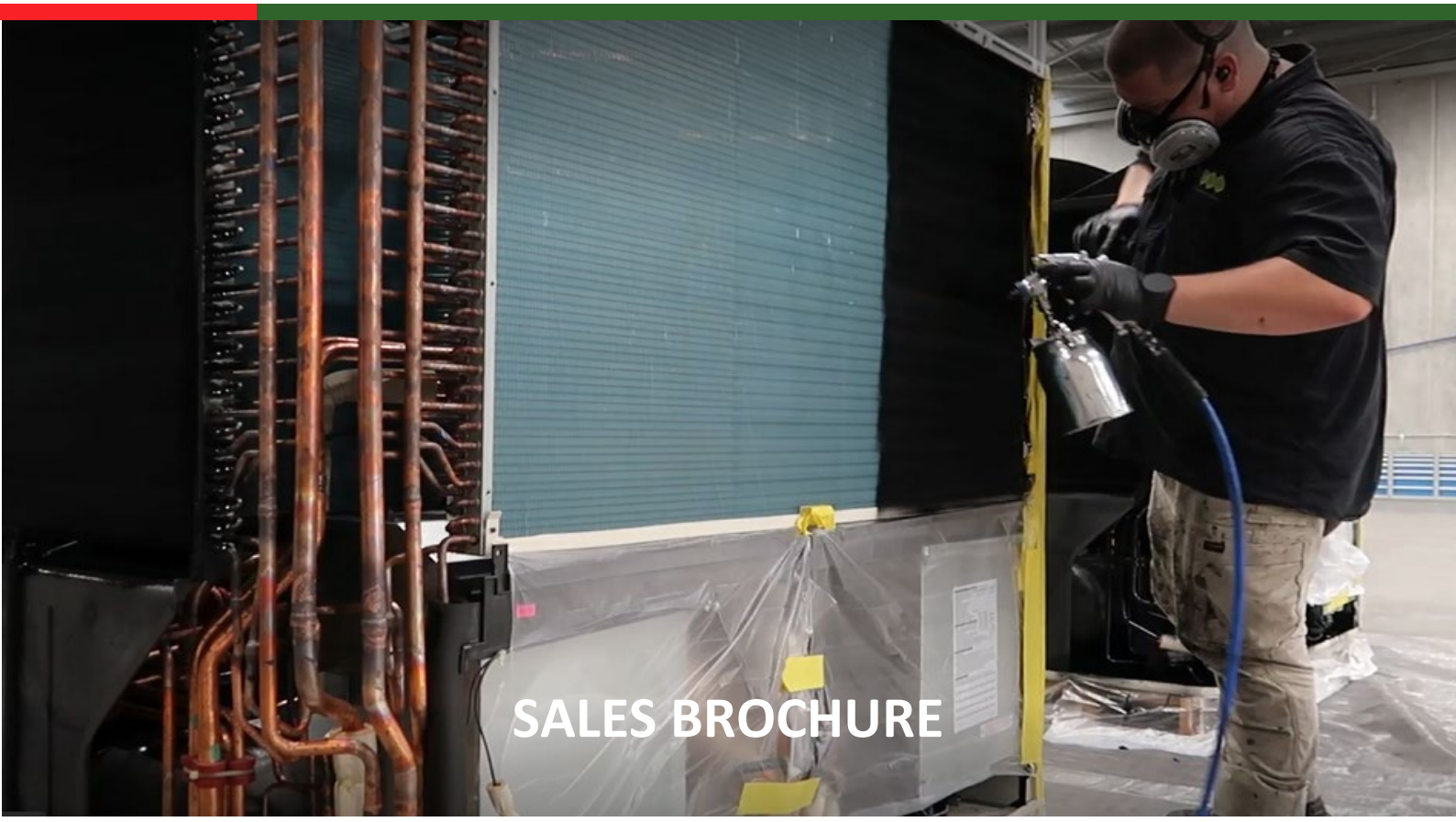
Powered by GMG® GRAPHENE

SUPERIOR HEAT TRANSFER AND PROTECTION

NANOTECHNOLOGY
Surface Area Increase & Water Resistant

SUPERIOR PROTECTION
Corrosion Resistant

SUPERIOR HEAT TRANSFER
Graphene Thermal Conductivity



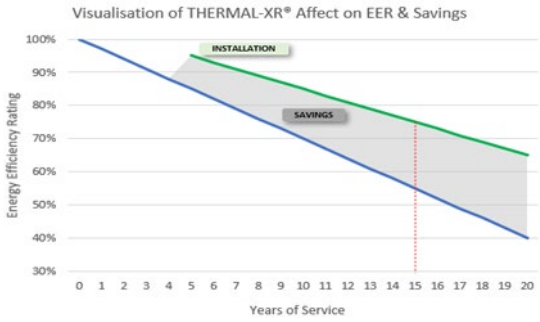
SALES BROCHURE

WHAT IS THERMAL-XR®

THERMAL-XR® powered by GMG Graphene has created a unique and novel way of increasing heat transfer and improving the thermal efficiency of Heat Exchangers. It is suitable for application on aluminium and copper fins and tubes in air-cooled heat exchange equipment.

COIL PROTECTION

Heat exchanger corrosion will reduce your equipment's efficiency exponentially.



WHY CHOOSE THERMAL-XR®

THERMAL-XR® has been independently performance verified, implemented globally, and exceeds various ASTM industry standards.

PROVEN PERFORMANCE | CASE STUDIES www.graphenemg.com

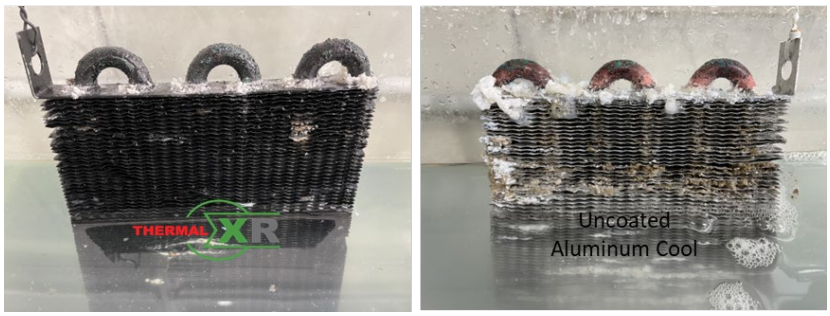
INDUSTRY APPLICATIONS

- **HVAC-R**
- **LNG & Gas Plants**
- **Oil & Gas Upstream**
- **Public Transportation**
- **Energy, Power, and Hydrogen Producers**
- **Refineries & Petrochemical Plants**
- **Chemical, Heavy & Mining Industry**
- **Electrical Transformer Heat Exchangers**

CORROSION PROTECTION

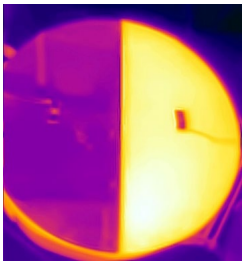
ASTM B117 Exceeds 10000 hours
ASTM G85 A1 Exceeds 3000 hours
Customer Verified
GMG Internal Tested

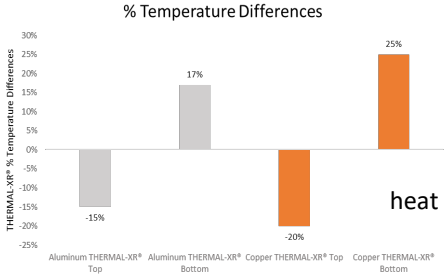
GMG Testing | 6 Months of Saltwater Emersion



HEAT TRANSFER

University verified.
THERMAL-XR® RESTORE powered by GMG Graphene enables greater heat transfer than uncoated metal.
GMG tests prove greater transfer in both directions.



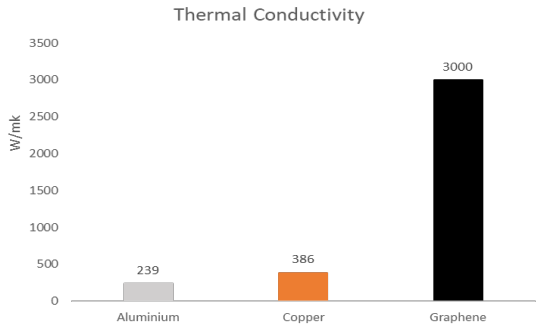


ENERGY SAVINGS

Healthy coils mean optimal compressor and fan operation, thus enabling energy efficiency and extra capacity.

GMG GRAPHENE THERMAL CONDUCTIVITY

Thermal conductivity of graphene via Phonon heat transfer. Phonon is a unit of vibrational energy that arises from oscillating atoms within a crystal. Phonons allow super-conductor-like properties, that store and remove heat.



APPLICATION PROCESS

1 THERMAL-XR® PREP
CLEANING

A highly concentrated combination de-ruster, degreaser and phosphator. It has been specially formulated to treat Aluminium before the application of THERMAL-XR® ACTIVE.

2 THERMAL-XR® ACTIVATE
SURFACE ACTIVATED

A highly concentrated chromium-free conversion coating for Aluminium. It has been specially formulated to treat Aluminium before the application of THERMAL-XR® RESTORE to enhance adhesion.

3 THERMAL-XR® RESTORE
COATING INSTALLATION

A direct-to-metal, water-based acrylic paint specifically formulated to adhere to HVAC and Refrigeration coils. With the addition of thermally conductive GMG G-POWER® Graphene, the coating rebuilds lost thermal efficiency destroyed from corrosion and contamination.

(Bare Aluminium Process. Precoated/Existing Coating will require caustic (alkaline) cleaning. See full application for details.)

PERFORMANCE PROPERTIES

Salt Spray	Marine Air Corrosion Resistance	ASTM B117	Exceeds 10000 hours
be Salt Spray Acidic		ASTM G85 A1	Exceeds 3000 hours
Water Immersion		ASTM D870	500 hours minimum
UV Resistance		ASTM D4587	
Cross Hatch	Level 0 European 5B, B-A	ASTM D3359-88 53151	Exceeds 1000 hrs
Flexibility		ASTM D522M	Pass
C5 Condensation		ISO 6270	Pass
C5 Chemical Resistance	Corrosion Resistance	ISO 7523	Pass

WARRANTY

5 Year Conditional Warranty

GMG is a clean-technology focused company which aims to offer energy-saving products and solutions and energy storage products, enabled by Graphene manufactured in-house via a proprietary production process.

GMG developed and proved its proprietary production process to produce GMG Graphene. This process produces high quality, low input costs, scalable, tuneable and low contaminant Graphene suitable for use in clean-technology applications. GMG's focus has been developing applications for **ENERGY SAVING AND ENERGY STORAGE SOLUTIONS**.

Customer Delivery Focused

Delivery of customer requirements are key to the business.

Innovate to Deliver

Continuous improvement in all parts of the business is practiced and no one person/manager holds the key to "logic". Company language allows coming up with new ideas in a safe environment.

No Harm To People Or Environment

Employee leadership at all levels shows and acts to not harm people, including employees, contractors and customers & the environment with our process, product or any other part of the business.

THERMAL-XR® *powered by GMG Graphene* is a Graphene Manufacturing Group Ltd brand.

PATENT PENDING

www.graphenemg.com | TSXV:GMG