



ARMAGEL.  
INSULATION  
JUST GOT  
BETTER.


[www.armacell.com/armagel](http://www.armacell.com/armagel)

 **armacell**<sup>®</sup>

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# Responding to customer demand.

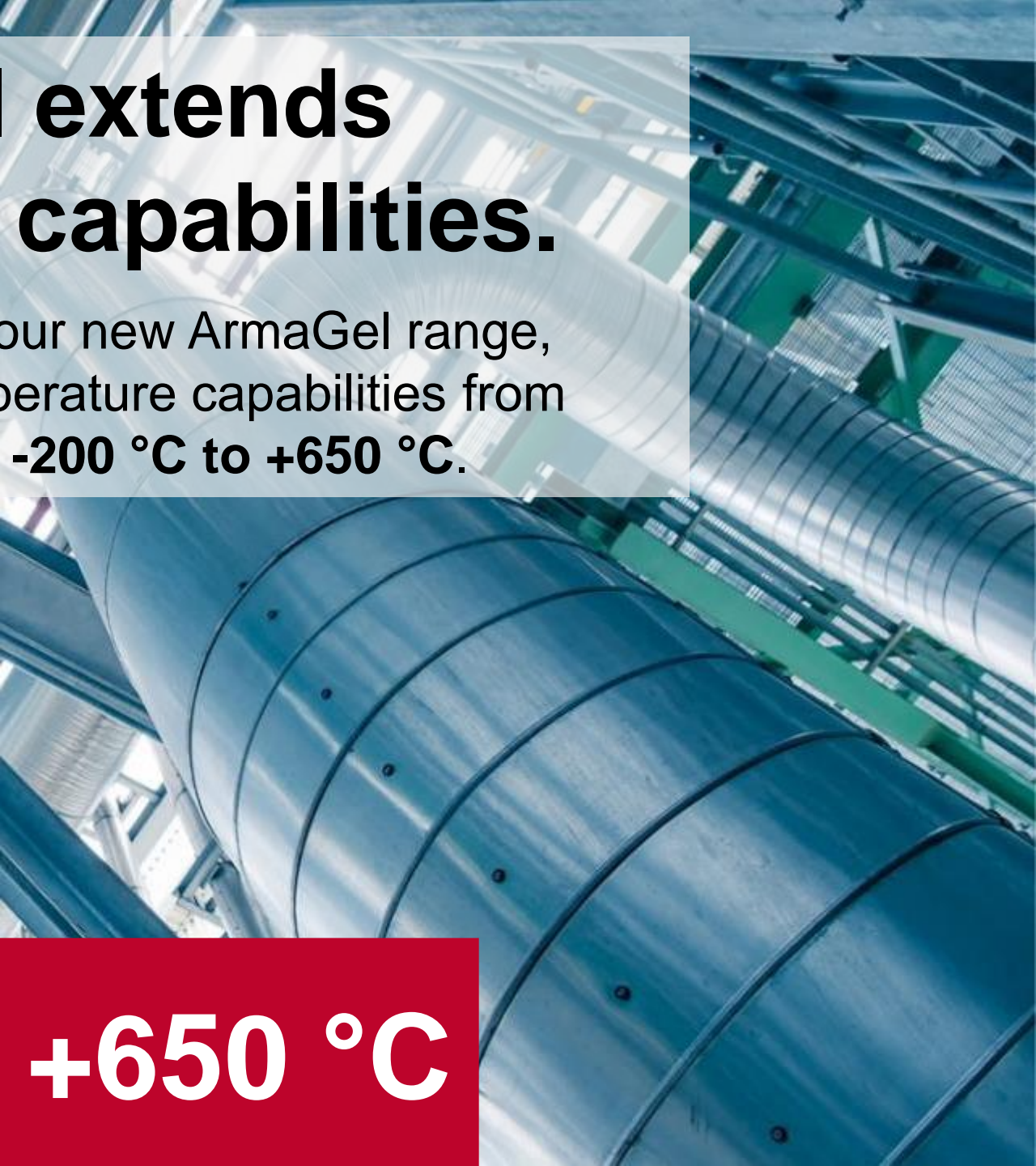
At Armacell, we know what matters to customers. Launching our next generation aerogel blanket builds on the corrosion under insulation (CUI) mitigating properties of our existing product portfolio and extends our temperature capability.

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# Armacell extends temperature capabilities.

With the introduction of our new ArmaGel range, we've extended our temperature capabilities from -50 °C to +125 °C to **-200 °C to +650 °C.**



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**-200 °C**

**+650 °C**

# Best of both worlds.

Our ArmaGel range is compatible with Armacell Engineered Systems' existing product range.




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# Say hello to the future. Today.

Introducing ArmaGel HT. One of the best performing insulation materials for high-temperature applications.

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A low-angle, upward-looking photograph of a complex industrial facility. The image is dominated by large, silver, corrugated metal pipes that curve and run parallel to each other. The pipes are supported by a network of blue steel beams and walkways. In the upper left, a prominent yellow pipe stands out against the blue and silver tones. The lighting is bright, suggesting an indoor or well-lit outdoor environment, with light filtering through the structure from above. The overall composition is dynamic and emphasizes the scale and complexity of the industrial infrastructure.

**For an extreme world.**

Keep your cool. Even in conditions up to  
**650 °C (1200 °F).**

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**ASTM C1728  
compliant.**

A reliable, quality solution  
that ticks all the right boxes.

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## // ArmaGel HT complies with ASTM C1728 Type III, Grade 1A

Standard specification with defined performance for each test method.

Classifies aerogel thermal insulation into 3 types, based on maximum use temperature:

- Type I — 125 °C (257 °F)
- Type II — 200 °C (390 °F)
- Type III — 649 °C (1200 °F)

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# // ArmaGel has passed all required ASTM Type III, Grade 1A certifications

## THERMAL CONDUCTIVITY

- ASTM C177 – Thermal conductivity

## NON-COMBUSTIBILITY & FIRE PERFORMANCE

- ASTM E84 – Surface burning characteristics

## MECHANICAL PROPERTIES

- ASTM C165 – Compressive strength
- ASTM C303 – Density
- ASTM C1101/C1101M – Flexibility or rigidity of mineral fibre blanket or board insulation

## WATER RESISTANCE / PERMEABILITY

- ASTM C1763 – Water absorption
- ASTM C1104/C1104M – Moisture resistance

## DIMENSIONAL STABILITY

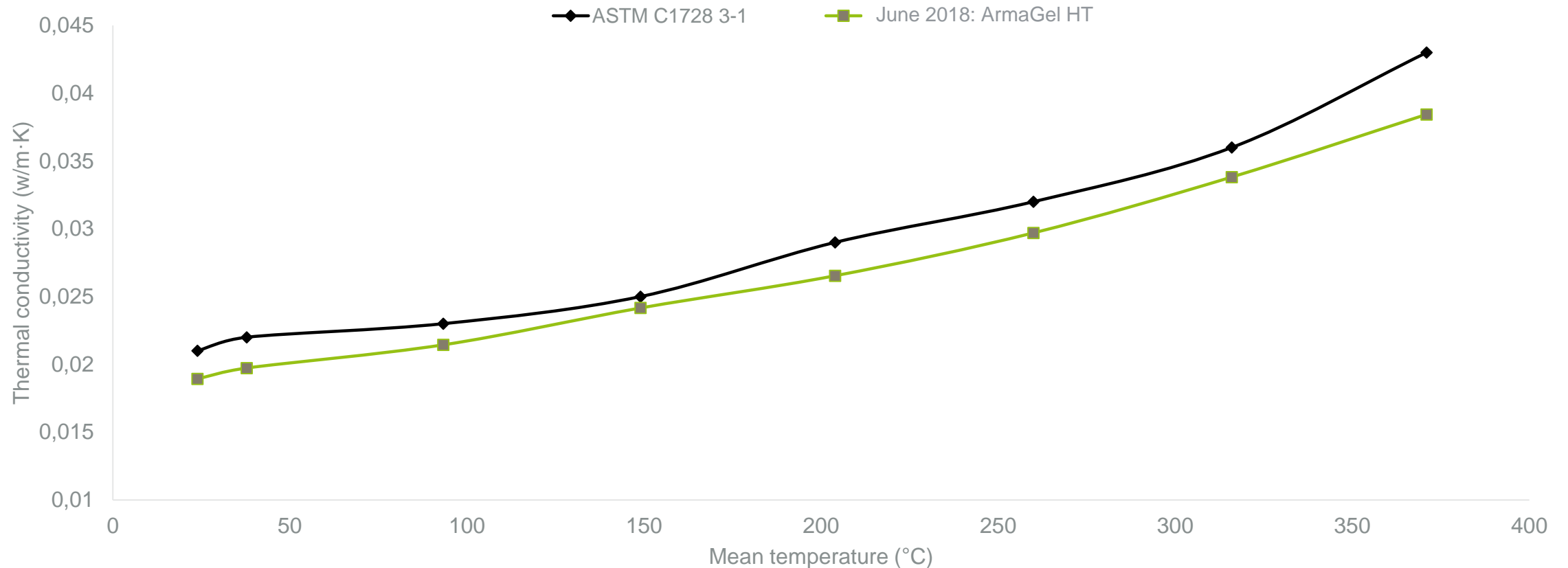
- ASTM C356 – Linear shrinkage under soaking heat
- ASTM C411 – Hot surface performance / Estimation of maximum use temperature / Sag resistance
- ASTM C411/C447 – Hot surface performance / Estimation of maximum use temperature

## OTHERS

- ASTM C795 – Corrosion test for austenitic stainless steel
- ASTM C1617 – Corrosion test for metal
- ASTM C1338 – Fungi resistance of insulation materials and facings

# // ASTM C177 – GHP TEST RESULTS

Korea Institute for Energy Research – June / July 2018 (W / m·K)



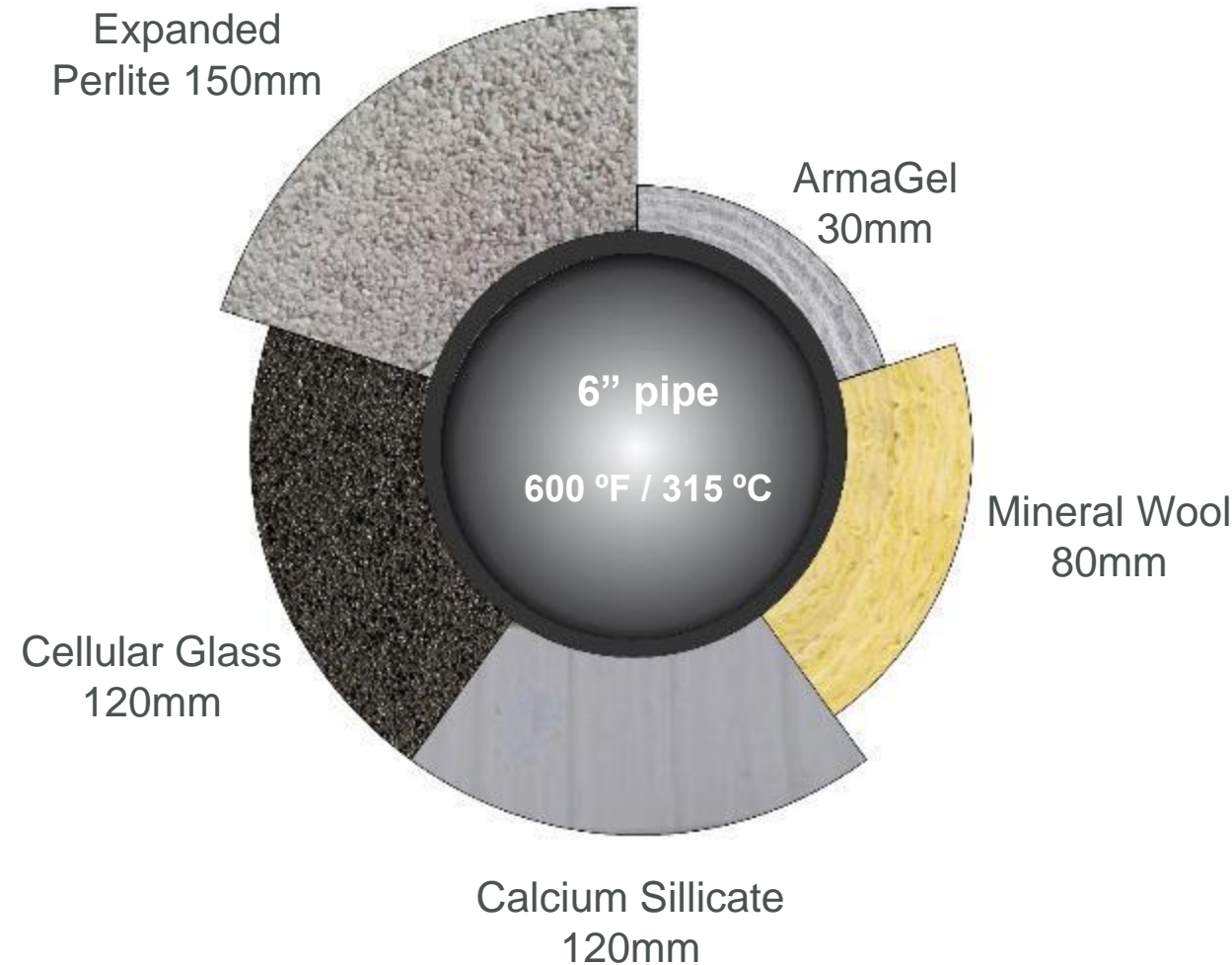
# Lower labour cost.

Thicker blankets enable you to install your total insulation system faster at a lower cost. 5, 10, 15 and 20mm available today. [More.](#)



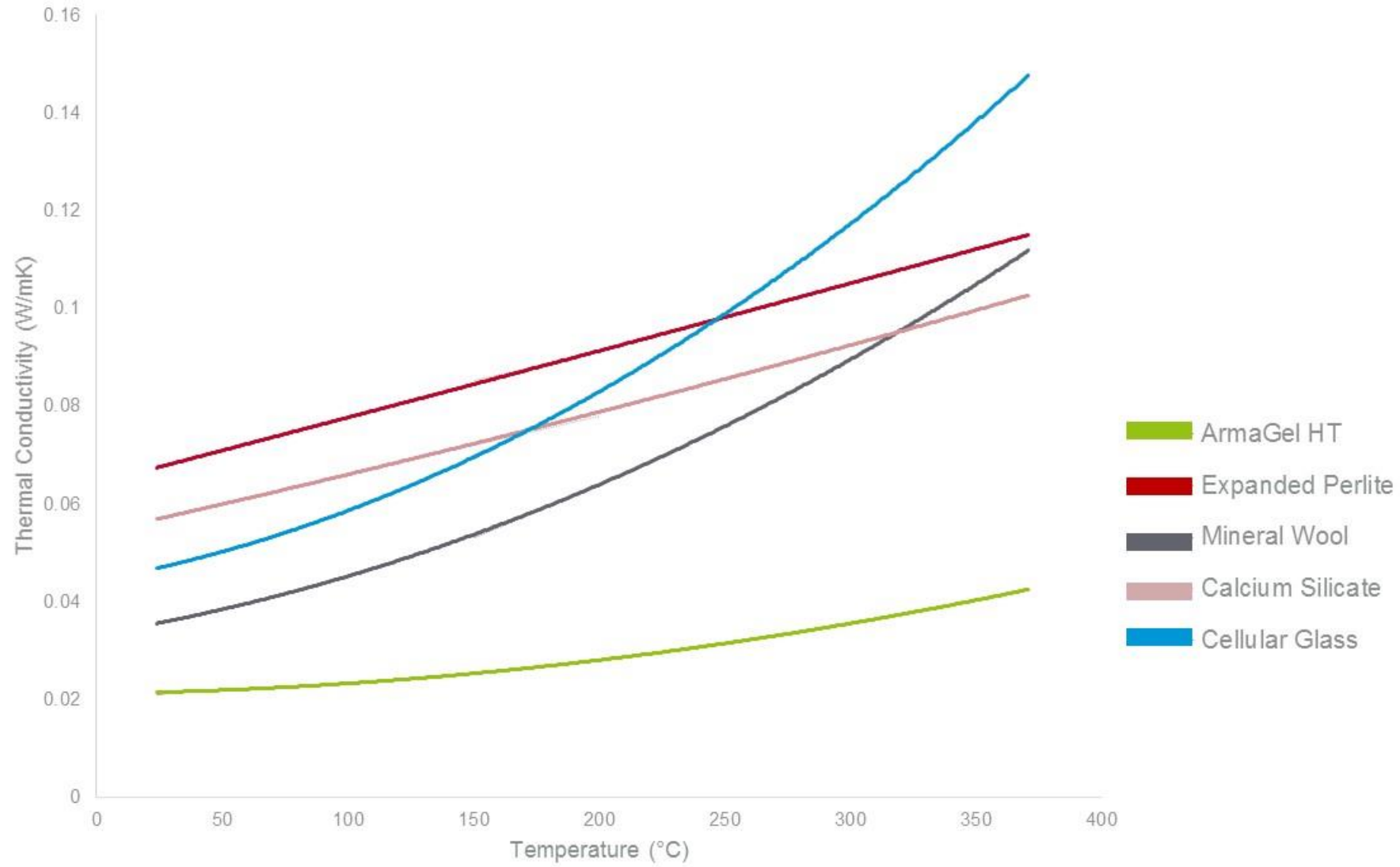
## // Superior Thermal Performance

Offering up to **5x superior thermal performance** than competing insulation products.  
Systems up to **80% thinner and lighter**.



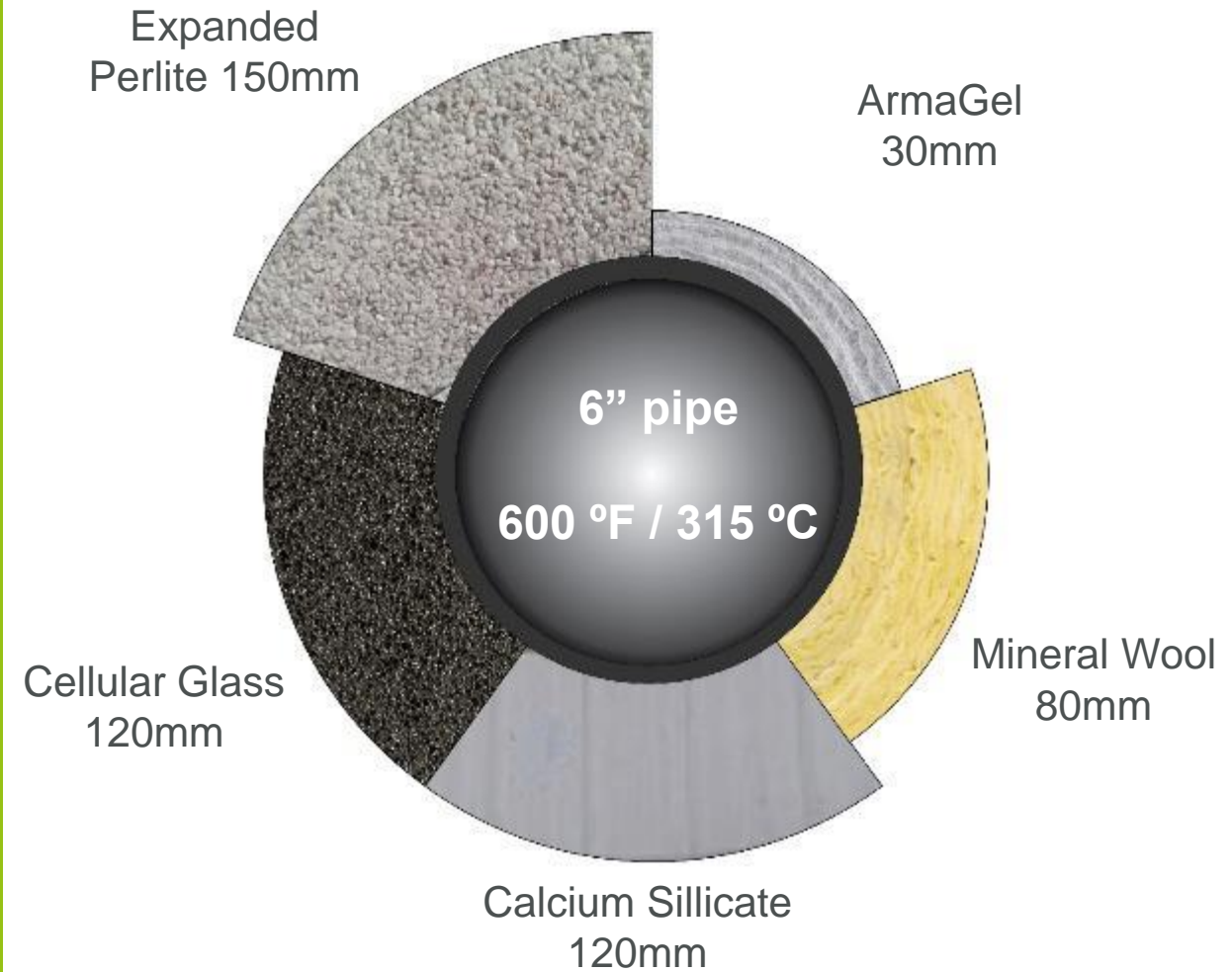
\*Heat loss [W/m<sup>2</sup>] indication based on practical equation  $0.6 \cdot (\text{line temp. } [^{\circ}\text{C}]) \Rightarrow 0.6 \cdot 300 = 180 \text{ W/m}^2$   
 $\Rightarrow$  renders: 34mm of aerogel. Assumed 30mm of aerogel. Insulation thickness calculated to ensure the same linear thermal performance (heat loss in W/m) or ca. 145 W/m = 150 Btu/(ft\*h). Insulation thermal conductivity as per the relevant ASTM specifications, incl. ArmaGel.

# // Thermal Conductivity Performance



## // Customer Benefits

- Up to 6mm / 0.4% of cladding circumference saved per 1mm reduction of insulation thickness.
- Reduced pipe spacing, allowing for a smaller plant footprint.
- Reduced weight leads to less supporting metal work for piping.
- Decrease in noise emissions.



## // Acoustic Performance

- ArmaGel Acoustic Systems proven to be **best in class** when compared to other aerogel and traditional insulation materials.
- **Independently assessed to strict ISO 15665 testing requirements.** [More.](#)
- Up to 40% thinner and lighter than comparable aerogel based acoustic systems. Saving materials, installation and cladding costs.
- No need for separate thermal and acoustic systems. We offer a system with powerful combined thermal and acoustic performance.



# Improved handling.

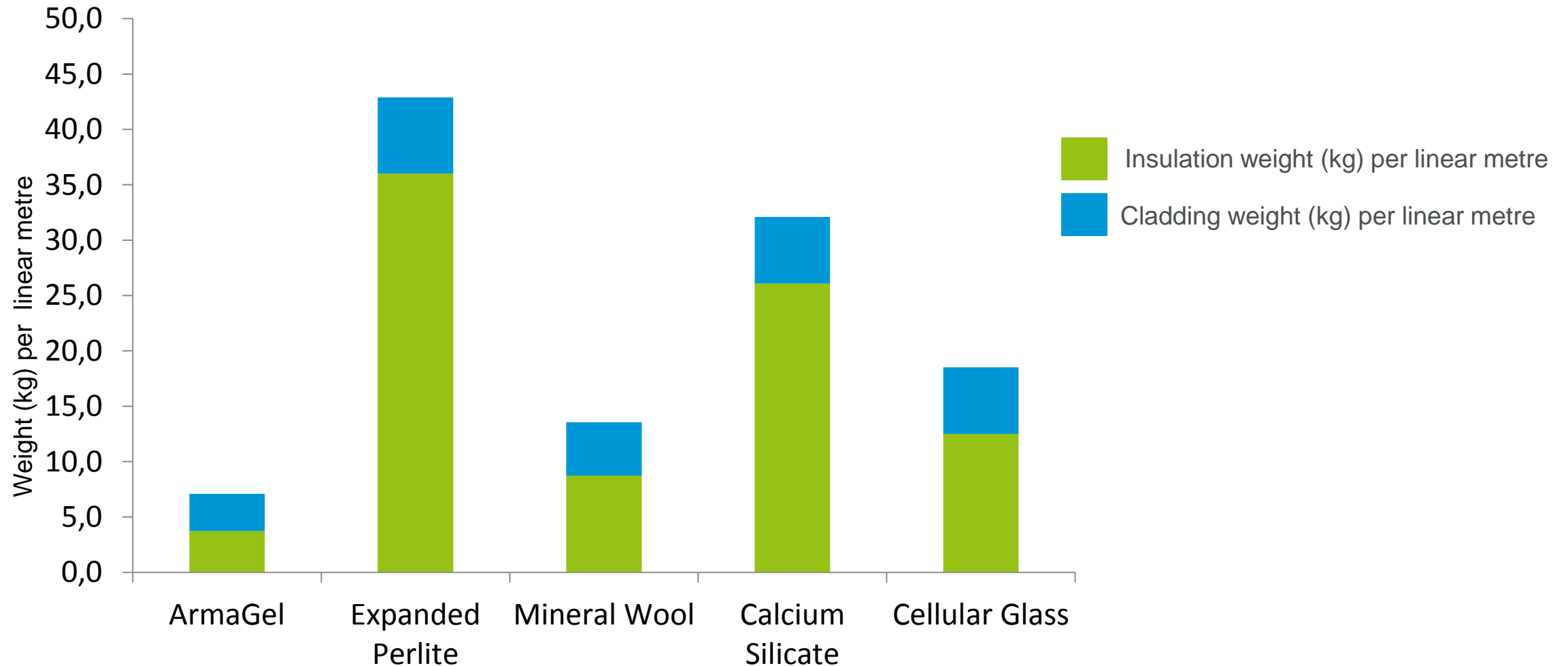
Thinner and lighter than  
conventional insulation systems.





## // Weight Performance

ArmaGel weight in comparison to conventional materials





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# Hydrophobic and breathable.

Repels liquid water, but allows vapour to escape, helping to mitigate corrosion under insulation.

## // The Best of Both Worlds

Hydrophobicity and breathability  
enhance protection against  
corrosion under insulation.

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# Remove and re-use.

Inspect your pipework with ease.  
ArmaGel's flexible nature and  
mechanical resilience enables you to  
remove, inspect and re-apply.

## // Installation Benefits

- Shop or field fabrication.
- Increased thicknesses reduces installation time.
- Low-weight and portable.





# Innovation.

Today, conventional manufacturing production for aerogel blankets takes 72 hours. ArmaGel HT takes 2 hours. At Armacell, we're making a difference around the world. [More.](#)

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A large-scale construction project for an offshore oil rig. Two massive cranes with red tips are lifting a complex, multi-level metal structure. The rig is mounted on a dark platform with 'THIALF' and 'EPREMA' visible. The background is a bright blue sky with scattered white clouds.

# Supply and demand.

Our innovative manufacturing process and scalability enables us to build capacity close to demand reducing logistics and supply costs.



# We're making a difference.

High energy saving performance.  
Environmentally safe. Chloride-free.  
Landfill disposable. ArmaGel HT.

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# APPENDIX

DISCOVER MORE

## // Acoustic Performance

- **ArmaGel Acoustic Systems: independently assessed to strict ISO 15665 testing requirements.**
  - Meet and exceed the ISO 15665 classification requirements.
  - Ensure optimal thickness and weight specifications.
  - Produce the required acoustic emissions mitigation for high and low temperature operations.

**OUR SYSTEMS MEET AND EXCEED STRINGENT INTERNATIONAL ACOUSTIC TESTING**

# // ArmaGel Range

Product	Min. Temp.	Max Temp.	5mm Blanket	10mm Blanket	15mm Blanket	20mm Blanket
ArmaGel HT	-40 °C (-40 °F)	+650 °C (1200 °F)	✓	✓	✓	✓
ArmaGel LT	-200 °C (-328 °F)	+125 °C (257 °F)	✓	✓	✓	✓



Available in Q1 2018



Available in 2019