

# INSULATION FOR THE OIL AND GAS INDUSTRY

## Arma-Chek<sup>®</sup> R

Flexible non-metallic covering for  
offshore and industrial installations

- // Flexible elastomeric covering formulated with CSM (CSPE) with combined acoustic barrier performance
- // Excellent mechanical and weathering protection
- // Specially developed for use in offshore and industrial environments
- // Mitigates the risk of corrosion under insulation (CUI)
- // Resistant to UV, salt water and chemicals
- // In-built water vapour barrier  $\mu > 50.000$
- // Works in harmony with ArmaFlex<sup>®</sup>, expanding and contracting as required
- // IMO certified

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



 **armacell**<sup>®</sup>  
Arma-Chek<sup>®</sup>

## TECHNICAL DATA – ARMA-CHEK R

Brief description	Flexible covering system for elastomeric and other insulation material types. Especially developed for use in offshore and industrial environments.
Material type	Flexible EPDM rubber formulated with Chlorosulphonated Monomer (CSM) also known as CSPE.
Colour	Grey
Product range	Sheets in rolls, 1 and 2 mm thickness / width 700 and 1,400mm. Arma-Chek Mastic is available for sealing of joints and seams.
Applications	Mechanical and weathering protection of insulated pipework, fittings, vessels and equipment in offshore, heavy industry, chemical and petrochemical environments.
Special features	Exceptional resistance to UV attack, salt water and mechanical impact. Reduces the risk of Corrosion Under Insulation (CUI). Excellent acoustic performance with natural dampening properties to reduce re-radiation effects.
Installation <sup>1</sup>	The ArmaFlex® and Arma-Chek® installation manual should be consulted before installation. Please contact Technical Services.
Regulation / approval compliance	MED Module B (EC type examination certificate) by DNV-GL / IMO 2010 FTP (Fire Test Procedure) Code part 2 and part 5.

Property	Value/Assessment		Standard/Test method
<b>Temperature range</b>			
Service temperature	Max. service temperature	+100 °C +212 °F	Determined based on thermal ageing behavior
	Min. service temperature	-50 °C -58 °F	
<b>Water vapour diffusion (transmission) resistance<sup>2</sup></b>			
Water vapour diffusion resistance factor	μ ≥ 50,000		Tested according to EN 12086 (Equivalent method ASTM E96)
Water vapour permeability	≤ 3.91 × 10 <sup>-12</sup> g/(m·s·Pa) ≤ 0.0027 Perm inch		
<b>Fire performance &amp; approvals</b>			
International standards	IMO Part 2 (smoke generation and toxicity) IMO Part 5 (surface flammability)	Approved by DNV-GL <sup>3</sup>	Tested according to IMO 2010 FTP Code
	Class 0 Class 1		Tested according to BS 476 Part 6 and Part 7
	< 25 flame spread index		Tested according to ASTM E84
	M1		Classified according to NF P92-507
Reaction to fire (Euroclass)	B-s3, d0		Classified according to EN 13501-1 Tested according to EN 13823 (SBI) and EN ISO 11925-2
<b>Density</b>			
Density	1,650 to 1,750 kg/m <sup>3</sup>	103.00 to 109.25 lb/ft <sup>3</sup>	Tested according to ISO 845, ASTM D1622
<b>Acoustic performance</b>			
Acoustic insertion loss	When used as part of a system Arma-Chek R complies to ISO 15665 Classes A to C and Shell DEP 31.46.00.31-Gen Class D.		Tested according to ISO 3741 (Equivalent method ASTM E1222) Classified according to ISO 15665
<b>Mechanical properties</b>			
Resistance to mechanical impact	Good		
Tear strength (MD/CD)	≥ 7.0 N/mm	≥ 40 lbf/in	Tested according to ISO 34-1 <sup>4</sup>
Tensile strength (MD)	≥ 4.5 MPa	≥ 653 psi	Tested according to ISO 37 <sup>5</sup>
Elongation (MD/CD)	≥ 200%		Tested according to ISO 37 <sup>5</sup>
Hydrostatic pressure resistance of joints	No leak at 6.89 bar (70.4 m) <sup>6</sup> 100 psi		Tested according to ASTM D5385
Puncture Resistance <sup>7</sup>	23.48 lbf / 104.44 N <sup>6</sup>		Tested according to ASTM D751
Bursting strength <sup>7</sup>	131 lbf / 582.72N <sup>6</sup>		Tested according to ASTM D751, Section 18.2



## Corrosion mitigation

Leachable (water-soluble) chlorides	≤ 100 ppm (mg/kg or µg/g) <sup>6</sup>	Tested <sup>8</sup> according to EN 13468 and ASTM C871
Leachable (water-soluble) ammonia ions	≤ 100 ppm (mg/kg or µg/g) <sup>6</sup>	Tested <sup>8</sup> according to EN 13468 and ASTM C871

## Other technical features

Weather resistance	Excellent	Assessed according to Allunga Exposure Laboratory
Ozone Resistance	Excellent <sup>9</sup>	Tested according to DIN 53509-1
UV resistance	Excellent <sup>10</sup>	Tested according to EN ISO 4892-2
Fungi Resistance	No growth <sup>6</sup>	Tested according to ASTM C1338
Application conditions <sup>11</sup>	Application temperature: <sup>12</sup> +5 °C to +35 °C Max. relative humidity: 80%	+41 °F to +95 °F
Sealing and adhesion	ArmaFlex Adhesive 520 or Adhesive HT625 shall be used for reliable adhesion. Minimum overlap should be ensured. Arma-Chek Mastic shall be used for sealing of joints and seams in accordance with our application manual.	
Storage	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight and in no direct contact with ground.	
Shelf (storage) life <sup>13</sup>	Max. 3 years	

- When installation of Arma-Chek R covering is conducted under ambient temperatures that differ from the final site conditions, or where ambient temperatures are expected to fluctuate, slight wrinkling of the installed Arma-Chek R covering may be expected. Caused by the natural contraction and expansion of the the underlying ArmaFlex insulation material, this wrinkling is solely aesthetic and has no effect the technical performance or integrity of the installed insulation system. Please contact Technical Services for additional guidance.
- Based on actual net thickness.
- The product meets the criteria of surface flammability (Part 5) for bulkheads, ceilings and linings as required by IMO 2010 FTP Code for insulation of pipe fittings for cold service systems. Further to this mandatory requirement the product meets the criteria of surface flammability (Part 5) and smoke generation and toxicity (Part 2) for floor coverings and primary deck coverings.
- Minimum value in Machine Direction (MD) and in Cross Direction (CD). Method B, procedure (b), angle test piece with a nick.
- Type 2 sample.
- Based on single test results. Can be used for information / reference only.
- Result for 2mm material only.
- Specimen preparation in accordance with EN 13486: neither cut, ground nor blended. Test temperature +100°C, leaching time 0.5 hours as specified in the standard for product maximum service temperature.
- Tested at 48h/25 ± 5 ppm / 20 ± 2 % elongation / no cracks.
- 1000h no cracking, no visible discoloration, 3000 / 5000 h cracking under microscope, slight discoloration.
- For environmental conditions outside the given range please contact Technical Services.
- Application temperature (temperature of installation) refers to the ambient temperature during application and the surface temperature of the substrate to which the product is installed.
- Shelf life (maximum storage time) is limited in order to make sure that only currently manufactured products are applied on projects. This limitation is restricted solely to storage of the product and does not affect the lifetime of product after it has been installed.

## Sheets

Item	Nominal Thickness [mm]	Nominal Roll Length [m]	Nominal Roll Width [m]	m <sup>2</sup> /carton
RCS-R20/1-07-GY	1	20	0.7	14
RCS-R10/1-14-GY	1	10	1.4	14
RCS-R10/2-07-GY	2	10	0.7	7
RCS-R10/1-07-GY	1	10	0.7	7
RCS-R05/1-14-GY	1	5	1.4	7
RCS-R05/2-07-GY	2	5	0.7	3.5
RCS-R05/1-07-GY	1	5	0.7	3.5

## Accessories

Item	Article description	Units/carton
ADH520/2,5E	2.5 Litre TIN	20 Litre
ADH520/1,0E	1 Litre TIN	12 Litre
ADH-HT625/1,0	1 Litre TIN	12 Litre
ACH-MASTICS	290 ml Cartridges	12 Cartridge