ce|de|pa News

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WHAT'S GOING ON IN…

ce|de|pa benefits mentioned in South Africa Roofing Magazine

In addition to direct customer interaction, the advantages of **ce|de|pa** go noticed in emerging markets like Sub-Saharan Africa by ways of events and publications.

In the article "More Sustainable Energy-Efficient Insulation for Construction" South Africa Roofing Magazine refers to how Dow and SAIP can enable innovation in construction insulation through the unique panel development center **ce|de|pa**. (see page 4 of this document).

Read the full article in the following pages.

INSULATION

More Sustainable Energy-Efficient Insulation for Construction

At the recent Interbuild Africa 2014 Expo, Mohammed Sami, Commercial Leader - Sub Saharan Africa at Dow Polyurethanes, gave a key speech on new innovations from Dow and how they ensure more sustainable energy-efficient insulation for the construction sector.

Mohammed Sami, Commercial Leader - Sub Saharan Africa at Dow Polyurethanes.

TRENDS & MARKET DRIVERS IN THE CONSTRUCTION MARKET

The growing influence of sustainable building initiatives is driving the demand for advanced construction materials that contribute to the energy efficiency of buildings, helping to reduce their carbon footprint. Ever-increasing emphasis is being placed on, inter alia, higher fire safety ratings and lower CO_2 emissions.

For example, insulated metal panels (IMPs) as used in the construction industry are facing more exacting requirements. Traditionally, the panel processing entails RF-DBL (Rigid-Faced Double Belt Lamination), which is a continuous process for producing steel-faced, foam-filled building panels. Currently PUR (Polyurethane) and PIR (Polyisocyanurate) insulated metal panels are the preferred materials or systems of choice for lightweight building envelopes.

FIRE SAFETY REGULATIONS

When construction products need to be in compliance with stringent combustibility standards for both fire reaction and fire resistance, PIR foams are increasingly utilized due to their advantageous fire behaviour (see Table 1).

FIRE REACTION AND FIRE RESISTANCE – INTERNATIONAL REGULATIONS AND INSURANCE STANDARDS

TEST	TEST	REGION
Norm EN 13501-1 (Euroclass) Test EN 11925-2 Test EN 13823 (SBI)	Fire Reaction	Europe
FM 4880	Fire Reaction	USA
LPS 1181	Fire Reaction	UK
Norm EN 13501-2 Test EN 1363 Test EN 1364-1	Fire Resistance	Europe
Norm LPS 1208 Test BS 476-22	Fire Resistance	UK

Table 1

DOW TECHNOLOGY FOR CONSTRUCTION INSULATION

PUR insulated metal panels are utilized by many players in the construction industry as a traditional technology of choice and represent the best option for prefabricated sandwich structures. Dow has a broad solutions offering for the construction insulation industry tailored to match customers' requirements and equipment (see Table 2).

The Dow VORATHERM™ PIR Series for construction panels is a versatile solution for the construction industry due to its excellent fire properties, good thermal insulation, balanced processability, remarkable panel durability, and characteristics of being lightweight yet structurally sound. Metal panels insulated with these Dow foam systems bring excellent performance that meet the stringent fire classification requirements of the construction industry according to Euro-classes, FM-North American and other insurance standards.

DOW SYSTEM	TECHNOLOGY	FIRE REACTION	FIRE RESISTANCE	PROCESSING LINES
VORACOR™ CM Series	B2-PUR	Bs2d0 Euroclass	N/A	Traditional
	B3-PUR	Cs3d0 Euroclass	N/A	Traditional
VORATHERM™ CN Series	PIR	Up to Bs1d0 Euroclass	EI 30/60	Traditional, Dedicated

Table 2

Dow VORACOR™ Polyurethane systems are available for the production of panels and boards according to the continuous (RF-DBL) and discontinuous (DCP) production processes.

They are customizable to meet customer and specification requirements, and compliant with the most demanding standards in various geographies – a great choice for a variety of panel applications.

BENEFITS:

- Fire rated and not fire rated options available
- Broad blowing agent offering: HFC (245fa and 134a-365/227), hydrocarbons, HCFC
- DCP systems are available with a pre-blended broader range of blowing agents, including full water blown generation-2 technology
- HFO / Low GWP non-flammable new blowing agents are available

NEXT GENERATION PIR FOR CONSTRUCTION PANELS

The next level PIR construction panel technology uses halogen-free flame retardants and enables the best fire rating.

The VORATHERM™ CN 100 Series allows manufacturers of IMPs via RF-DBL to produce panels able to meet the growing interest in halogen-free flame retardant additives for construction insulation materials, while retaining the stringent flammability performance required by the construction industry. VORATHERM™ CN 100 Series insulated metal panels have proven to be able to achieve up to Euroclass B-s1,d0 and FM 4880 approval fire ratings (see Table 3).

	VORATHERM™ CN 600	VORATHERM™ CN 800	VORATHERM™ CN 100 *(NEW)*
TYPICAL CERTIFICATION			
Reaction to Fire *	Euroclass B-s2,d0	Euroclass B-s2,d0	Up to Euroclass B-s1,d0
Resistance to Fire *	EI-15	EI-30/60	EI-30/60
TYPICAL THERMAL INSULATION VALUES			
Initial Lambda mW / (mK) at 10 °C	18 - 20		
TYPICAL PROCESSABILITY			
Temperature of Conveyor (°C)	40-50	60-65	60-65
Adhesive Layer	Not Required	Available on Request	Available on Request

* Numerical flame spread or fire classification are not intended to reflect hazards presented by this or any other material under actual fire conditions.

Table 3

INSULATION

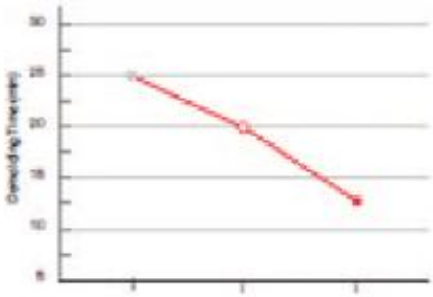
DOW TECHNOLOGY FOR DISCONTINUOUS PANELS PRODUCTION

Although PUR-cored insulated metal panels are the insulation technology of choice in many construction applications for buildings, panel manufacturers are looking at technologies that improve the k-factor of the foam and increase the productivity of high-thickness panels in order to improve the energy efficiency profile. Dow has introduced its PASCAL™ PRO technology for DCP Production, which can work with any blowing agent and offers a faster cycle time at 40% improved productivity, 10% lower applied density, and 5% improved thermal insulation.

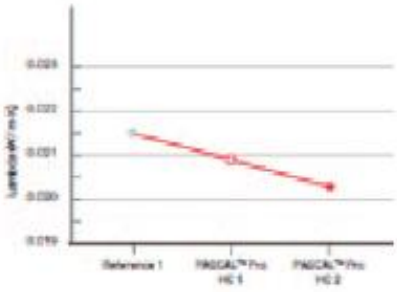
Sustained quality and design without increasing costs.

PASCAL™ PRO: BRINGS STEP-CHANGE IMPROVEMENTS WITH SEVERAL FIRE-RATINGS AND BLOWING AGENT TECHNOLOGIES.

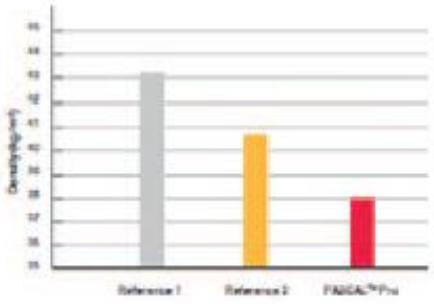
PASCAL™ PRO Improves Productivity



PASCAL™ PRO Improves Lambda



PASCAL™ PRO Lowers Applied Density



CONSTRUCTION INSULATION DEVELOPMENT CENTER – CE|DE|PA

Dow and SAIP Equipment – a global leader in the development and realization of advanced machineries for the polyurethane industry – have jointly started operating ce|de|pa in 2011.

ce|de|pa is a state-of-the-art, independent and industrial-scale line conceived to allow Dow and SAIP customers first, and the construction industry at large, to accelerate the development of novel solutions for the manufacturing of PUR-made panels for thermal insulation. By accessing ce|de|pa, they can test, prototype and develop their own PUR-made panels for thermal insulation produced with a continuous lamination process, leveraging the continued availability of this advanced line supported by local quality control laboratories.

Thanks to the continued availability of the new ce|de|pa line, it will be possible to simulate all phases of the industrial production of continuous panels in polyurethane for thermal insulation, developing novel solutions able to further differentiate them on the global market. More information is available at www.cedepa.org.

For more information on Dow, its VORACORTM PUR and VORATHERM™ PIR Insulation Systems and its PASCAL™ PRO technology, visit www.dow.com.

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SAIP ADVANCED POLYURETHANE EQUIPMENT

Dow

ce|de|pa CENTRO DE DESARROLLO DEL PANEL EN CONTINUO CONTINUOUS PANEL DEVELOPMENT CENTER

TEST AND DEVELOP INNOVATION AT

ce|de|pa

www.cedepa.org

About SAIP Equipment - SAIP is an equipment designer and manufacturer for the polyurethane industry driven by innovation and quality. SAIP is committed to developing innovative solutions for the sustainable success and growth of its customers. Established in 1978 and headquartered in Inverigo (Como, Italy) SAIP leverages a network of commercial branches and affiliated companies around the world. Over the years SAIP has developed various kinds of technologies according to different applications such as the CONTITECH, continuous production lines for sandwich panels; the DITECH, discontinuous production lines for sandwich panels; the REFTECH, complete foaming lines for the refrigeration industry; the PIPETECH, foaming systems for pipe in pipe and pipe joint insulation; the SAIPTECH, customized and turnkey solutions for any technical application of polyurethane, epoxy and silicone resins. SAIP range includes also competitive and state-of-the-art, high and low pressure foam dispensing machines, elastomers casting systems and much more. SAIP provides its customers with the highest level of project-team specialization and with exclusive technical assistance focused on their needs, ensuring continuity in business relationships.
More information at: www.saipequipment.it

About Dow - Dow (NYSE: DOW) combines the power of science and technology to passionately innovate what is essential to human progress. The Company is driving innovations that extract value from the intersection of chemical, physical and biological sciences to help address many of the world's most challenging problems such as the need for clean water, clean energy generation and conservation, and increasing agricultural productivity. Dow's integrated, market-driven, industry-leading portfolio of specialty chemical, advanced materials, agrosciences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 180 countries and in high growth sectors such as packaging, electronics, water, coatings and agriculture. In 2013, Dow had annual sales of more than $57 billion and employed approximately 53,000 people worldwide. The Company's more than 6,000 products are manufactured at 201 sites in 36 countries across the globe. References to "Dow" or the "Company" mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted.
More information at: www.dow.com