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Armaflex Ultima in the state-of-the-art Mercedes Benz Commercial Vehicle Centre Weser Ems

In a fire low smoke density decisive for the safety of people in buildings

With the introduction of the European product standards and corresponding CE marking for technical insulation materials, European fire classes replaced the previous national fire classifications. When adopting the European fire classification system, many countries tightened the requirements concerning the smoke development of building products. With Armaflex Ultima Armacell is the only manufacturer of flexible technical insulation materials to provide a closed-cell product with fire classification BL-s1, d0 and B-s2, d0 to fulfil these requirements. The new Mercedes Benz Commercial Vehicle Centre in Bremen-Hemelingen is one of the first large-scale projects in Germany in which Armaflex Ultima was used for technical insulation.

Built to concentrate commercial vehicle expertise on one site, the Mercedes Benz Commercial Vehicle Centre Weser Ems in Bremen-Hemelingen spans an area of 42,000 square metres. After a construction period of just one year, the state-of-the-art vehicle centre, where some 120 people are employed, opened its doors to customers in North Germany in summer 2013.

Sustainable building

Daimler Real Estate specifically focussed on sustainability in the construction project and, for example, installed a 730 m² photovoltaic system on the roof of the service building. The solar power is intended to meet the centre's electricity requirements, but can also be used to charge electric vehicles. The water management concept is also exemplary: only drinking water is sourced from the public network, the process water (for the car wash and toilet facilities, for example) comes from a well on the premises. All wastewater from the car repair shop and car wash facilities is collected and biologically treated on site so that it can be re-used.

Innovative energy concept

The energy concept at the Hemelingen site is particularly ambitious: the annual energy demand is to be 40 % below the primary energy requirement defined in the German energy saving regulation (EnEV 2009). This would mean that the firm's CO2 emissions would be some 146,000 kg per year below the amount defined in the EnEV 2009. To provide a comparison: a German

citizen's annual CO2 emission is 10,000 kg on average. The building is heated by an air/water heat pump with an output of 130 kW and two gas-fired condensing boilers (each 260 kW). Hot water needs are met by solar thermal energy and the building is cooled by electricity from the photovoltaic system and the reversible heat pump.

Threefold protection: condensation control, energy loss prevention, low smoke density in a fire

The air-conditioning system with an effective output of 199 kW is run with cooling water. To insulate the cooling water pipes, which have line temperatures of 6 °C (feed) and 12°C (return), engineering office Dirk Diedrichsen TGA (Siegen) specified the new Armaflex Ultima for the first time. Dirk Diedrichsen, technical planner for building services: 'Armaflex Ultima caught our attention at the Chillventa and we immediately specified it for this demanding project. We always aim to use state-of-the-art solutions in our planning. Armaflex Ultima is the only material I know that develops minimal smoke in a fire and provides the cooling-water pipes with reliable protection against condensation. What's more, it looks really good - especially in the technical facilities room. The staff at Daimler Real Estate were also delighted with the attractive appearance and neat installation of the material when they carried out their final inspection.'

Outstanding installation properties

Insulation contractors K&N Isoliertechnik (Stendal) installed the new Armaflex Ultima to protect the cooling-water pipes in the commercial vehicle centre against condensation and energy losses. Around 700 m of Armaflex Ultima tubes in an insulation thickness of 19 mm were used. To glue the new Armacell insulation material, the insulators applied Armaflex Ultima 700 adhesive, the reliable special adhesive for a wide temperature range. Before the installation work began, K&N Isoliertechnik's employees received training in the application of the new material on the building site. Torsten Niemeck, Managing Director of K&N Isoliertechnik: 'We used Armaflex Ultima for the first time at the Mercedes Benz Commercial Vehicle Centre in Bremen-Hemelingen. Our conclusion is that the material is even easier to install than the black AF/Armaflex. It can be cut more neatly and glued more easily.' The insulation materials were supplied by the Nienburg branch of Kiesewetter.

On 29 July 2013, the Mercedes-Benz Commercial Vehicle Centre opened its doors. It now offers customers all the services connected with vans and lorries at Europaallee 8, directly on the Hemelingen motorway feeder road.

For installing Armaflex Ultima, Armacell provides adhesives which have been specially developed for use with the new Armaprene® insulation materials, such as Armaflex Ultima 700 adhesive

Armaflex Ultima not only protects the pipes against condensation and unnecessary energy losses, in a fire it develops 10 times less smoke than traditional elastomeric insulation materials

The new insulation material made by Armacell can be cut neatly and glued easily.