

A panoramic view of the Dubai skyline at sunset. The sun is low on the horizon, casting a warm orange and yellow glow across the sky and the city. The Burj Khalifa is the most prominent skyscraper on the right side of the frame. The sky is filled with scattered clouds that catch the light of the setting sun.

Dawn of a NEW ERA

Green building codes offer a unique opportunity to create sustainable buildings. In most parts of the world these are voluntary schemes but in the Middle Eastern emirate of Dubai, sustainable construction is now mandatory. How do Knauf Insulation products measure up?

KNAUF INSULATION
it's time to save energy



FROM THE LARGEST shopping mall on Earth to the world's tallest building via the biggest indoor snow ski slope on the planet, Dubai is a Middle Eastern city that likes to push the limits of construction.

But beyond the forests of skyscrapers, the giant man-made islands, plans to build the world's biggest indoor temperature-controlled city and the extraordinary construction that will accompany Expo 2020 in Dubai, there is another ambitious development shaping the city – green building.

Architects, specifiers, developers and construction companies are familiar with the voluntary demands of green building programmes such as LEED, DGNB, BREEAM or HQE among others, but in Dubai green regulations governing

43%
Annual energy savings reported by public buildings in Dubai as a result of the emirate's mandatory green regulations

construction elements such as energy performance, indoor air quality, fire safety, acoustic comfort and resource efficiency have been mandatory for new public buildings since 2010.

In 2014 they became the law for every new building and deep renovation.

It has been a move that has been welcomed by the construction sector particularly in the light that some public buildings reported annual energy savings of up to 43%.

Knauf Insulation recently held a conference in Dubai for government officials, architects, consultants and contractors to showcase how the company's Glass Mineral Wool with ECOSE® technology could contribute to the emirate's Green Building Initiative.

"Dubai is one of the most pioneering cities in the world when it comes to a mandatory green code and at Knauf Insulation we are impressed by its rigorous detail," says Vincent Briard, Knauf Insulation's Head of Sustainability, Products & Buildings.

"The code does not yet consider the full environmental lifecycle impact of products (LCA), which we believe will be a foundation for the future of construction, but it certainly appears to be comprehensive in its scope." ■

HOW WE GO BEYOND DUBAI'S GREEN CODE

At every stage of a product's life there is an environmental impact – from the sourcing of materials to create that product to a product's manufacture, transportation, installation, use and ultimately disposal.

Again, Knauf Insulation is demonstrating its leadership, making available upon request Life Cycle Assessments for most of its products. Now within a few clicks it's possible to characterise the environmental impact of Knauf Insulation products at every stage of its lifecycle.



ECOSE® TECHNOLOGY AVAILABLE IN THE UAE

Less than two hours away from Dubai in Abu Dhabi, the capital of the United Arab Emirates, Knauf Insulation has been operating a joint venture with Exeed Insulation LLC since 2013.

Renamed Knauf Exeed Insulation LLC, the business started producing Glass Mineral Wool with ECOSE® technology in early 2014 and fully converted the production from July 2014.

WHY KNAUF INSULATION'S PRODUCTS ARE A PERFECT FIT FOR DUBAI'S GREEN CODE

DUBAI REQUIREMENTS	HOW KNAUF INSULATION MEASURES UP
<p>Building envelope must have good thermal properties "Building elements forming the external walls, roofs and floors must have an average thermal transmittance which does not exceed a U value of 0.3 W/m²K for roofs and 0.57 W/m²K for external walls."</p>	<p>Our Glass Mineral Wool with ECOSE® Technology is not only softer, easy to cut and non-itchy compared to traditional insulation, it contributes by reducing the risk of thermal bridges, is light and easy to transport and with thermal conductivity as good as 0.034 W/m²K, it offers solutions to meet levels outlined by the code and beyond.</p> 
<p>Efficient air ducting and water piping is mandatory "For all new buildings all pipes carrying refrigerant, hot water or chilled water and ducts, including those for conditioned air, must be insulated to minimise heat loss and prevent condensation."</p>	<p>Whatever the type of pipe or duct, the service and products offered by Knauf Insulations' Technical Solutions is the perfect fit. Literally. With easy-to-fit insulation for all pipe lengths and diameters as well as a large products portfolio, our mineral wool products for technical use and for Heating, Ventilation and Air Conditioning (HVAC) combine low thermal conductivity with ease of installation and exceptional fire safety (non-combustible, up to A1 Euroclass standard).</p> 
<p>Excellent acoustic performance is mandatory "All new buildings must adhere to regulations restricting internal and external noise pollution."</p>	<p>Our Glass Mineral Wool is perfect for the building envelope and partition walls. When used in construction systems it significantly reduces airborne and impact sound transmission, which are becoming important points of focus in public buildings and the urban environment.</p> 
<p>Good indoor air quality is vital "Independently accredited indoor air quality testing must be carried out prior to occupancy and strict limits are imposed for air contaminants such as formaldehyde."</p>	<p>Our Glass Mineral Wool with ECOSE® Technology is a revolutionary binder technology with no added formaldehyde based on rapidly renewable materials instead of petro-based chemicals. We have consistently achieved the highest standards of internationally recognised certification for our products including Indoor Air Comfort Gold (Eurofins) or Greenguard Gold for our Glass Mineral Wool.</p> 
<p>All insulation material must be fire resistant "Materials must be fire resistant in accordance with the requirements of Dubai Civil Defence."</p>	<p>Our unfaced Glass Mineral Wool products achieve the highest A1 Euroclass for fire reaction.</p> 
<p>Material and waste resource effectiveness is critical "All insulation materials must be manufactured without the use of Chlorofluorocarbons (CFCs), be non-toxic, have 0.05 parts per million or less of added formaldehyde... recycled content and regionally sourced content must each account for at least 5% of the total volume of materials used in the construction of the building."</p>	<p>Our Glass Mineral Wool with ECOSE® Technology supports resource efficiency as it is made using recycled content (up to 80% in some locations), is recyclable at end of life, does not use CFCs and the binder technology has no added formaldehyde. Furthermore, thanks to the proximity of our Abu Dhabi plant, our products can be considered as 'locally sourced' for Dubai.</p> 
<p>Green roofs may be mandatory "All roofs including open areas shades must have a minimum roof solar reflective index of less than 29 for roofs with a slope steeper than 1:6 and less than 78 for flat roofs. For all new buildings these requirements are waived if the roof of the building is provided with a vegetated roof (green roof) for at least 30% of the total roof area."</p>	<p>Knauf Insulation's green roof system Urbanscape has already been impressing developers in Kuwait with a project to bring greenery to barren areas of desert. But perhaps more importantly in a city where water is precious, Middle East test cases have revealed that Urbanscape® with polymers can contain up to 122% more water than sites without the material. Undoubtedly, the solution will be a major success in Dubai.</p> 