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ROCKWOOL on embodied carbon

Rapid urbanisation across the world means that effective management of the built environment is becoming increasingly important in reducing carbon emissions. There are two types of carbon emissions with respect to buildings: operational carbon and embodied carbon.

Operational carbon refers to greenhouse gases emitted during the lifetime of a building, while embodied carbon refers to greenhouse gases emitted during the extraction, manufacture, transport, installation, use, and end of life of building materials. The operational carbon of buildings accounts for around 30 percent of the world's greenhouse gas emissions. Together this is known as whole-life carbon.

Reducing and decarbonising the energy consumption of new and existing buildings is therefore critical to meet global climate goals. Insulation plays a major role in reducing the energy required to heat and cool buildings and – combined with other efficiency measures – can significantly reduce the energy consumption and operational carbon emissions of buildings. As energy demand for buildings remains relatively high, much more needs to be done to significantly reduce this demand.

Embodied carbon in general represents a small share of total buildings emissions today, but as operational carbon decreases across the world – because of more energy efficient buildings – its proportional share will grow. This is the case in a growing number of countries. In Sweden, for example, the electricity grid and heating/cooling systems are low-carbon and building materials already account for half of the total carbon footprint of new buildings. Whilst regulations such as the EU Emission Trading Scheme are driving a reduction in such emissions, the increase in the relative contribution of embodied carbon is focusing greater attention on building materials.

Considering the embodied carbon of materials is important. A prerequisite for this is the availability of comparable, reliable carbon data. This, however, is currently a challenge due in part to there being no generally accepted way to report data. This lack of harmonisation extends to different practices for reporting on lifecycle carbon emissions. In ROCKWOOL's view, ensuring a true representation of the embodied carbon of materials requires that all lifecycle stages be included. Without addressing such challenges, there will continue to be a high risk that decisions around whole-life carbon of buildings are sub-optimal.

However important it is to focus on lifecycle carbon, that is not the only consideration when choosing or evaluating building materials. For example, one also needs to consider other properties and benefits of the materials such as fire resilience, indoor air quality, and recyclability, as it is crucial to avoid sub-optimisation. ROCKWOOL products deliver a significant benefit when it comes to reducing buildings' long-term operational carbon as well as offering industry-leading acoustic and fire safety performance. For instance, over the lifetime of its use, the building insulation we sold in 2020 will save 100 times the carbon emitted in its production.

In 2020, we announced ambitious, science-based global decarbonisation targets that have been verified and approved by the Science Based Targets initiative (SBTi). Key elements of our decarbonisation plans include:

- Reducing factory absolute greenhouse gas emissions by 38 percent by 2034 (relative to baseline year 2019)¹, and;
- Reducing non-factory, absolute lifecycle greenhouse gas emissions by 20 percent by 2034 (relative to baseline year 2019)².

These absolute emission reduction targets, which supplement our existing sustainability goals, equate to an ambitious one-third reduction of ROCKWOOL's lifecycle (Scope 1, 2, and 3) greenhouse gas emissions by 2034, while at the same time ensuring continued reduction in the carbon intensity (carbon emitted per tonne

¹ The 38 percent target covers Scope 1 and 2 emissions.

² The 20 percent target covers Scope 3 emissions.



produced) of our production. As we work towards fulfilling these targets, the embodied carbon of our products will be reduced significantly.