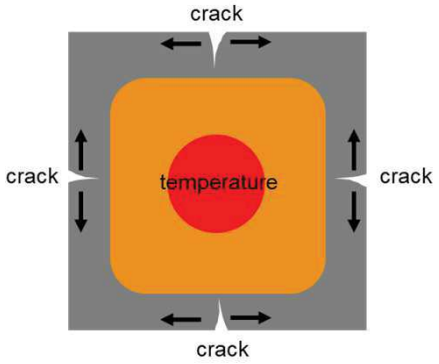
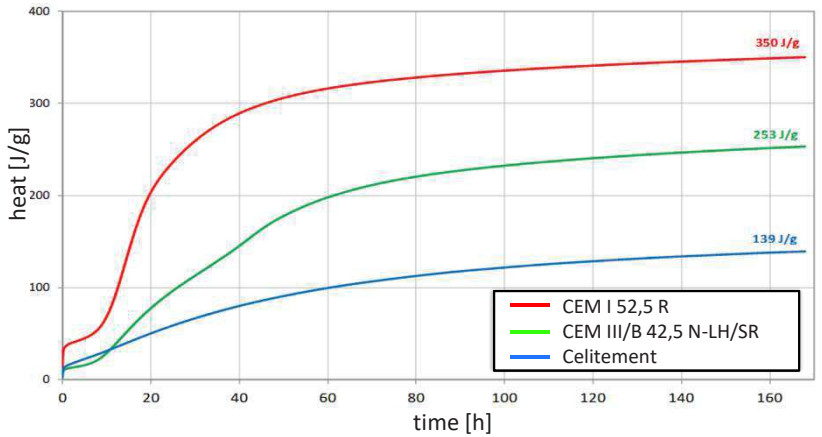
Advantages of Celitement for *massive concrete components*

During the reaction of cement with water, heat is released. In the case of massive concrete components, this heat flows slowly to the ambient, i.e. heat builds up in the core of the component, resulting in core temperatures of up to 80 °C. This leads to stresses, cracks and, in the case of later moisture penetration, to delayed ettringite formation (DEF), which often results in damage to the concrete after years.



In order to keep the absolute temperatures and temperature gradients low, aggregates and cements are precooled, ice is added to the fresh concrete or a complex internal cooling of the component is carried out. In addition, the production of massive components requires a high degree of steel reinforcement to distribute the occurring cracks. The use of Celitement could significantly reduce these time-consuming and cost-intensive measures.

This is because *Celitement* is predestined for the production of massive concrete components, as less heat is released than with conventional cements despite a rapid strength development. Compared with LH cement (≤ 270 J/g) and VLH cement (≤ 220 J/g), it shows an extremely low heat of hydration (≤ 150 J/g). In addition, delayed formation of ettringite can be excluded because Celitement, unlike Portland cement, is almost free of aluminum and sulfates.



This results in numerous advantages for typical mass concrete applications:

- ***Massive foundations and base plates***
- ***Massive components for hydraulic structures***
- ***Massive columns and beams, e.g. bridge piers***