

### BFA WKSB and FESI – Insulation Contractors in Germany and Europe

Complete insulation solutions make the environment, life, work and production safer and more comfortable. Inside and out – all over the world. The BFA WKSB - Bundesfachabteilung Wärme-, Kälte-, Schall- und Brandschutz im Hauptverband der Deutschen Bauindustrie - represents Germany's Europe and World wide acting industrial insulation companies with special knowledge of how deploying sustainable insulation systems in industrial plants and in the industrial environment.

As this BFA WKSB is core member of FESI - the European Federation of Associations of Insulation Companies, representing the European insulation contracting sector. We promote insulation as one of the best, the most cost effective and sustainable manner to save energy.

### Energy efficiency in the industrial plant sector - What about insulation?

The demand for energy continues to rise rapidly: Researchers project an increase of 50 percent worldwide over the next 20 years. At the same time, emissions will have to be cut in order to prevent significant global warming.

In the Past increasing energy costs forced the industry to make substantial improvements in energy efficiency. Achievements were done by investing in often "high tech" solutions. Cogeneration of heat, Heat recycling, Process optimization, house keeping, insulation of building sector...

But the average insulation thickness in industry stayed at the same level as 30 Years ago:

|                      | Power Plant          | Current building code | Passive House        |
|----------------------|----------------------|-----------------------|----------------------|
| Temperature          | 250°C – 640°C        | 18°C – 22°C           | 18°C – 22°C          |
| Heat loss (AGI Q101) | 150 W/m <sup>2</sup> | < 10 W/m <sup>2</sup> | < 3 W/m <sup>2</sup> |
| Insulation thickness | 100mm                | 100mm                 | 350–500mm            |

Common Arguments within the industry: Heat loss doesn't matter, there is no destination for saved heat, plant operation does fine without insulation, pipes will not fit into the pipe rack, never change a running system, and insulation would cause changes in the process.

**The brutal facts** (only EU refineries): 5-10 % are badly or non-insulated (US 20-25 %). 150.000 barrels of oil are lost DAILY due to insufficient insulation. This also means 20 million tons of CO<sub>2</sub> emissions. Awareness could be better!

### Best practice examples and calculations

A consideration of pay-back periods shows that the reduction of heat losses through insulations is a cost-effective and economic measure to save energy. The pay-back period PBP\* even increases only insignificantly where the insulation layer thickness is increased over and above the economic up to the ecological measure: environment protection through insulation is thus very cost-effective. Example: A pipe with a Diameter Nominal DN 500 with a three hundred degree hot medium has a pay back time for its economic insulation thickness of about 1,5 weeks (cf. Technical Letter No. 6 of BFA WKSB).

If industrial plants are not insulated properly, energy and money are wasted and the environment is stressed needlessly!