

JuSyS[®] CFB adiabat

**Ceramic Lining System for Adiabatic Brickwork Areas
in Circulating Fluidized Beds**



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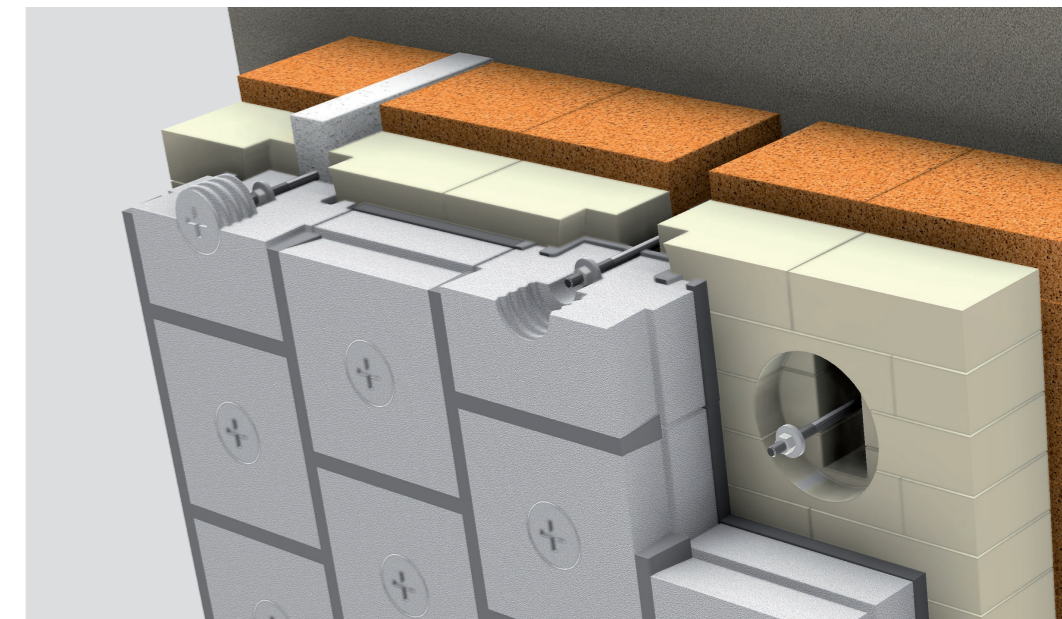
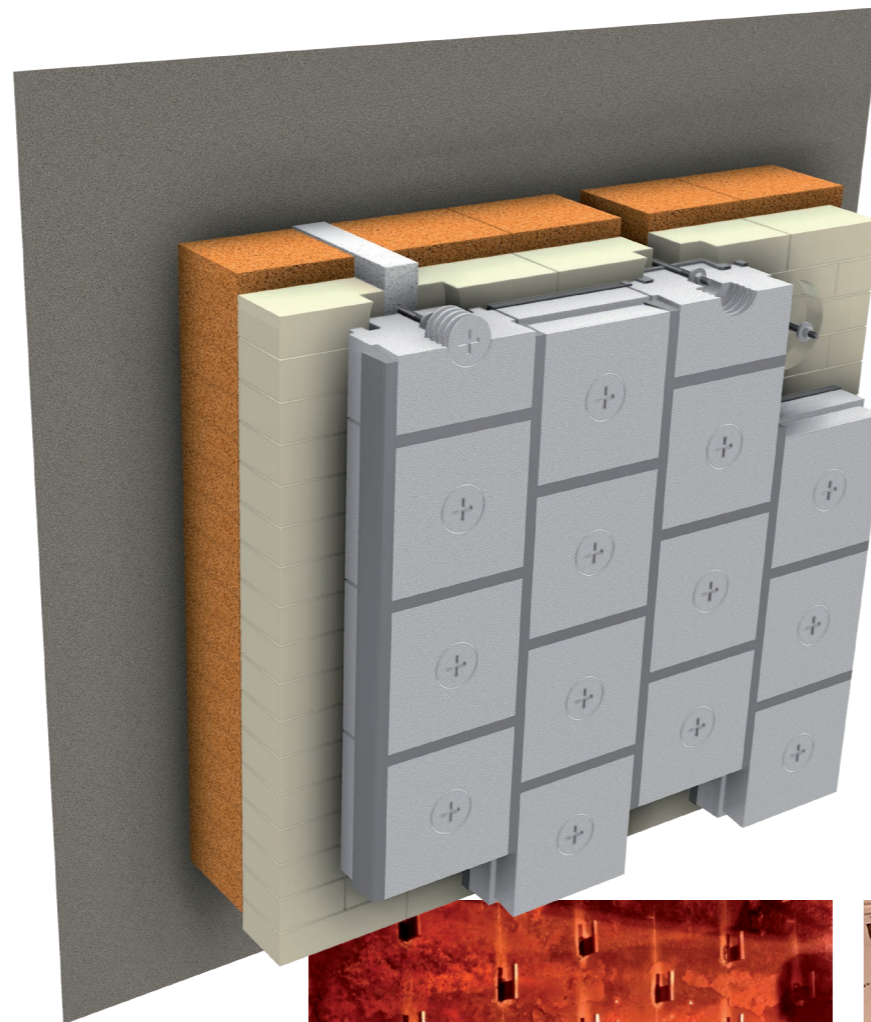
With the successful market introduction of the ceramic tile system *JuSys*[®] CFB for the lining of membrane walls in circulating fluidized beds J+G soon faced the challenge to also utilize the advantages of the system for adiabatic parts of the CFB and, consequently, take the first mover position in the market. J+G was successful in achieving this by the development of *JuSys*[®] CFB adiabat as subsequent follow-up.

As is the case for *JuSys*[®] CFB, various fired and, consequently, sintered products are available. J+G can offer their customers the best suited base material for the specific application case and regardless if *JuSys*[®] CFB adiabat is stressed by extreme abrasion, chemical attack, combustion of RDF, extreme thermal shock or a combination of all of this. J+G can offer *JuSys*[®] CFB adiabat for almost all requirements in a tailored way. The already superb properties of the base products are ensured by controlled manufacture in the plant without any loss of quality upon installation at the construction site. Abrasion resistance even increases by the subsequent ceramic firing.

The advantages of *JuSys*[®] CFB adiabat are not limited to the free choice of material but are specifically also based on the design of the system. *JuSys*[®] CFB adiabat mainly consists of the main refractory part with delicate design, metallic holding elements, highly abrasion-resistant special mix to close the joints, and the self-levelling casting mix for positive connection of the main refractory part to the rear insulation. Thermal expansion is mainly absorbed in the vertical and bed joints so that large areas are possible with slight overall expansion.

The accomplished slight overall expansion means reduced movement of the system upon startup and shutdown of the CFB and, consequently, less intake of ash. For demonstration purposes *JuSys*[®] CFB adiabat parts were broken out after service and it could be seen that there were no ash deposits at the border layer between the main refractory part at the hot side and the rear insulation. There is no better proof of the efficiency of the *JuSys*[®] CFB adiabat concept. The central position of the metallic holding elements and the design of the main refractory part enable partial replacement in case of need.

| Material example: | JUBRICK TE300A | JUBRICK TE300C | JUBRICK CO000A |
|---|----------------------|----------------|-----------------------|
| Raw material base: | bauxite | bauxite | cordierite |
| Type of setting: | ceramic | ceramic | ceramic |
| Bulk density [g/cm ³]: | 2,90 | 2,90 | 1,95 |
| Porosity (apparent) [%]: | 16 | 16 | 17 |
| max. service temperature [°C]: | 1.450 | 1.400 | 1.350 |
| Abrasion resistance [cm ³]: | 3,5 | 3,5 | 9,0 |
| Cold crushing strength [MPa]: | 140 | 140 | 90 |
| Thermal shock resistance: | water >30 x | water >30 x | water >60 x |
| Remarks: | resistant to alkalis | - | low thermal expansion |



>> Advantages

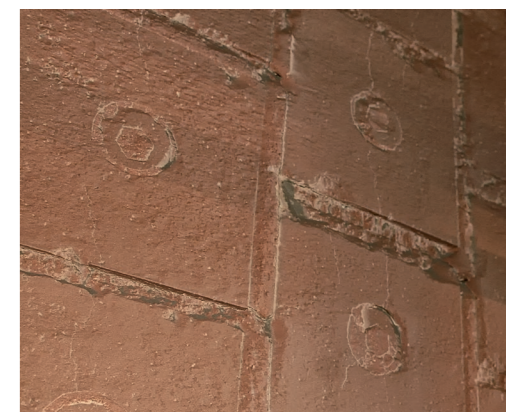
- Installation possible in straight and curved walls
- Optimized product properties by manufacturing production and ceramic firing
- Wide spectrum of base products enables a tailored overall solution
- Solid connection between *JuSys*[®] CFB adiabat and the rear insulation prevents ash intake to a great extent
- Reduced overall expansion of areas out of *JuSys*[®] CFB adiabat by system-immanent expansion compensation
- Replacement of smaller areas possible
- High availability of the areas lined with *JuSys*[®] CFB adiabat



JuSys[®] CFB adiabat anchor fixation and insulation



JuSys[®] CFB adiabat during installation



JuSys[®] CFB adiabat after >16,000 operating hours



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