

***NAWTEC14 Speaker Abstract: Design Considerations and Results
for Double-Layer Refractory Tile Systems***

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A recent trend in the use of refractory materials for tube wall protection in waste to energy boilers has included a combination of a castable silicon carbide cement layer, covered by refractory tiles. The system is installed by first dry-setting the silicon carbide refractory tiles, then casting a self-flowing silicon carbide cement behind the tiles.

These installations are widely used in Europe and are now gaining experience in the United States. Design considerations included heat transfer calculations, thermal expansions considerations and tile attachment and fit schemes. Results to date have been very favorable in terms of refractory life and double protection layers for tube walls, with an added benefit of increased heat flow in areas of the boilers where these tiles are used.

Mr. Stephan is Market Manager- Incineration for Saint-Gobain Ceramics- Energy Systems. He has been with Saint-Gobain and the former Norton Company for 20 years, specializing in refractory and high performance ceramic materials. He has previously presented papers on refractory tile systems at NAWTEC and NACE conferences.