

## New mounting solution for acoustic ceilings - a case study of Focus DS

*By making small alterations to current acoustic ceiling constructions one can change the overall installation experience and create a more mountable- and demountable friendly product that adheres to the needs of the market.*

You may know of the standard acoustic ceiling, you know the one where you just push a tile up, but I wonder if you know much more than that. The acoustic ceiling market today is a jungle of different products; one can choose what color the ceiling should have to what kind of mounting-system to use. The reason for this vast variation is because the market requires an acoustic ceiling to be both functional as well as aesthetically pleasing. In order to fulfill those needs Saint-Gobain Ecophon developed a product called Focus DS which is a demountable acoustic ceiling with a concealed grid system. Even though Focus DS fulfills the markets needs Ecophon discovered that there were issues with the current design of Focus DS that often resulted in damages to the ceiling tiles when mounting or demounting them. In an effort to enhance Focus DS and in order to prevent damages to the tiles two different types of concepts were thought of that would aid in the mounting and demounting of the tiles.

The first concept is a clip that is mounted on to the ceilings grid system. When the tile is mounted on to the grid system the clip would act as a spring and prevent the tiles from moving unwantedly. The second concept was to use the current design of Focus DS but add grooves on the tiles that would latch on to the grid system more efficiently – also in order to stop the tiles from moving unwantedly. The reason why one doesn't want the tiles to move is because it can create a "chain- reaction" meaning that if a tile is demounted other tiles may move and in worst case scenario fall down and get damaged. Sometimes the tiles also moves when the pressure in the room changes which also (in worst case scenario) could mean that a tile falls down.

The project of generating the concepts started with a problem analysis of the current design of Focus DS and was then followed by interviews and observations (of people demounting and mounting tiles on a small scaffolding complete with a grid system) in order to gather raw data for the identification of the consumer needs. Based on the consumer needs a concept generation was performed in two parts. The first part was an external search which included an investigation of what kind of products that where on the market (that fulfilled the consumer needs) as well as a patent search. The second part was an internal search where concepts were generated based on the findings from the external search as well as based on personal knowledge. In the last part of the master thesis the two final concepts were chosen with the help of a decision matrix as well as with the help of intuition.

Even though the concepts are generated based on a case study of Focus DS they could be implemented with other acoustic ceiling products as well. The benefits you gain from an acoustic ceiling working "perfectly" are many. To name a few benefit: the overall esthetical appearance of a room will not change if the tiles doesn't move and fall down and get damaged furthermore if less tiles are damaged one doesn't have to replace them - which costs money.