

## Group technology in a hybrid flowshop environment: A case study

Carlos Andres \*, Jose Miguel Albarracin, Guillermina Tormo, Eduardo Vicens,  
Jose Pedro Garcia-Sabater

**Abstract:** This paper addresses the problem of products grouping in the tile industry. This production system can be classified as a three-stage hybrid flowshop with sequence dependent and separable setup times. Main objective has been to identify a set of families integrated by products with common features. This classification would help Production Managers to minimize changeover time, allowing them to further reduce production times. The basic concept of “exploiting similarities”, taken from the Group Technology (GT) philosophy, has been used to address the problem in a creative way. A new “coefficient of similarity” between each of the products, has been defined and used as a parameter, allowing products to be grouped through a heuristic method. This research has already been applied in the framework of a real case, getting quite positive results (actual reduction in both setup and production costs, easier long-horizon planning and short-horizon scheduling, more accurate set up time estimates for new products, etc.).