

Characteristics of the Fiber Reinforced Thermoplastic Composites(FRTC) Using the Covered Yarns

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Last presentation, we introduced a new way of manufacturing the fiber reinforced thermoplastic composites(FRTC) by using the yarn covering method.

The mechanical and morphological characteristics were investigated and the degree of impregnation was inspected by comparing FEM results with the experimental results. From the point of last work, the impregnation was a little below the average values compared with those of the other manufacturing methods. But the phenomenon of insufficient impregnation of the last work was analyzed into originating from the molding processes. Last work, we used the molding system which had two dams and two-way open sides, from which the over-flow of matrix materials could be made. But the overflow in manufacturing the thermoplastic material(FRTC) was not desirable to lead to the desirable degree of impregnation.

So, in this work, we carried out joint research with HANGUK FIBER to manufacture the fiber reinforced thermoplastic composites(FRTC) prepared from the yarn covering method in order to improve the degree of impregnation and the other processing problems.

With the specimen from this work , we investigated the degree of impregnation, void distribution, and cross-section morphology. And also the mechanical strength and fiber-matrix interface were inspected.