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Electromagnetic Interference Shielding Characteristics for Stainless Wire Mesh and Number of Plies of Carbon Fiber Reinforced Plastic

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Abstract : In this paper, the electromagnetic shielding characteristics of an up-to-date typical carbon filler material, carbon fiber used with a metal mesh were investigated. Carbon fiber 12k-prepregs, where carbon fibers were impregnated with epoxy, were laminated with wire meshes, vacuum bag-molded and hardened to manufacture hybrid-type specimens, with which an electromagnetic shield test was performed in accordance with ASTM D4935-10, through which was known as the most excellent reproducibility is obtainable among electromagnetic shield tests. In addition, glass fiber prepress whose electromagnetic shielding effect were known as insignificant were laminated and formed with wire meshes to verify the validity of the electromagnetic shield effect of wire meshes in order to confirm the electromagnetic shielding effect of metal meshes corresponding existing carbon fiber 12k-prepregs. By grafting carbon fibers, on which studies are being actively underway in the environmental aspects and electromagnetic shielding effect, with hybrid-type wire meshes that were analyzed through the tests, in this study, the applicability and possibility are proposed.

Keywords : Carbon Fiber Reinforced Plastic(CFRP), Glass Fiber Reinforced Plastic(GFRP), stainless wire mesh, electromagnetic shielding
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