Replacing impact modifiers based on mineral craft (mineral polymer) instead of chlorinated polyethylene in hard PVC pipes and fittings industries

Frrhad Moradian Nejad [1]*

[a]*Department of Sepahan is the leader, Faculty of Scientific growth center, University name Isfahan Islamic Azad University (Khorasgan), City, Esfahan Country Iran*

[*] *E-mail: polymerazmon@gmail.com*

. In this article, the effect of using inorganic polymer additive IM20-80 (Kraft impact modifier) instead of chlorinated polyethylene on mechanical properties, especially the impact behavior of hard polyvinyl chloride, with the formulation of materials for PVC connection systems is studied Raw materials include PVC resin, thermal stabilizer, filler, pigment, and compared. has taken. internal and external lubricants, and impact modifiers, including two types of additives, one is IM20-80 kraft base modifier, a product of the leading Baspar Sepahan company, and the other is First, the materials were mixed in a turbo mixer and polyethylene. Chlorine grade A135 in China. then converted into PVC joints by an injection machine and subjected to qualitative tests in accordance with the relevant national standards in the mechanics laboratory of Azad University of The results of mechanical Najaf Abad and the laboratory of Hamgam Manufacturing Company. impact tests (falling weight) and bending show that by keeping the rest of the formulation components constant and changing the type and amount of impact modifier used in joints (substituting IM20-80 instead of chlorinated polyethylene), the mechanical properties of The Therefore, this replacement of the opinion of the criteria of the national standards was accepted formulation in raw materials, by changing the amount of modifier consumption, can be economical in terms of economic efficiency. It should be noted that both samples meet the requirements of impact, compression, indentation and wicket tests according to the relevant national standards.

Keywords: rigid polyvinyl chloride joints, impact modifiers, mechanical properties.

References

[1] Sun S, Li C, Zhang L, Du HL, Burnell-Gray JS (2006). Effects of surface modification of fumed silica on interfacial structures and mechanical properties of poly (vinyl chloride) composites. European polymer journal; 42(7):1643-52