

**A10.1****Halogen free new recyclable cable with low toxic gas emission**

YOSHINO A., SAWADA H., SUZUKI J., HASEGAWA M., MURAYAMA M., SHINMOTO T., Fujikura Ltd., Tokyo, Japan

Résumé

Les fils et les câbles doivent non seulement présenter des propriétés électriques et mécaniques fiables mais aussi, en cas d'incendies, une haute marge de sécurité. A cet effet, nous fournissons, depuis 1983, des câbles sans halogène, à petite émission de fumée, résistants aux flammes que l'on appelle "Clean Cable". Du point de vue écologique, nous avons développé un nouveau type de câble sans halogène recyclable à petite émission de gaz toxiques. Le matériau utilisé pour notre nouveau câble recyclable est de petite densité ($d=1.1$), sans halogène, et résistant aux flammes. Grâce à la différence de densité entre le nouveau matériau et le PVC, la séparation des deux matériaux peut s'effectuer facilement par la technique de flottement.

Abstract

Wire and cables are demanded to have not only high reliability in electrical and mechanical properties, but also low disaster characteristics from the viewpoint of fire safety. For this purpose, we have supplied low smoke, halogen free, flame retardant cables called "Clean Cable" since 1983. From the viewpoint of environmental protection, we have developed a new type of halogen free recyclable cable with low toxic gas emission. Our new recyclable cable's material is low density ($d=1.1$), halogen free, and flame retardant material. By means of density difference, separation of the new material and PVC can be carried out easily with water flow on waste treatment.

1 Introduction

In recent years, global trends in Eco-protection "earth-friendly" or "environmentally-friendly" methods have been growing stronger. Beginning with MARPOL73/78 (the International Convention for the Prevention of Pollution from Ships) in 1972, a broad spectrum of legal controls have been imposed to protect the environment, relating to waste reduction, conservation of natural resources and pollution reduction. For general-purpose wire and cables, with polyvinyl chloride (PVC) have been widely used. PVC has led to greater discussion about the effects of dioxin emissions resulting from the incineration and lead contamination of

reclaimed land resulting from wastelandfills. From the view point of environment protection, new demands call for wire and cables which are easy to recycle and reduce the waste. Fujikura approached this problem on early, and commercialized halogen-free, flame retardant cables called "Clean Cables" in 1983, with the use of these cables being demonstrated in telecommunication field, subways and ships.[1,2] Based upon our "Clean Cable" technology, we have developed new halogen free recyclable cable called "Eco Cable" with low toxic gas emission. The "Eco Cable" furthers the concept of environment protection.