

## THE EFFECT OF ULTRAVIOLET RADIATION ON THE STRUCTURE AND PROPERTIES OF PENTAPHTHALIC PAINT COATINGS \*

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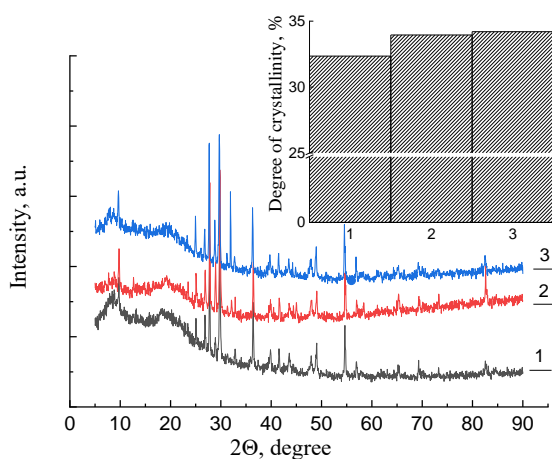
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The work presents the results of the study of the effect of UV- radiation on a structure and properties of pentaphthalic paint coatings. The PF-115 pentaphthalic paint applied evenly onto 08 kp steel. Coatings were irradiated with the UV-rays (207 nm) during the curing process for 30 and 60 minutes [1, 2].

The impact of the effect of UV-radiation on the structure of pentaphthalic paint coatings was investigated by XRD method with help of a DRONE 3M diffractometer (CuK $\alpha$ )[3]. It was obtained that a degree of crystallinity of pentaphthalic coatings cured under the room temperature without irradiation is lower than a degree of crystallinity of coatings cured under irradiation by UV-rays. The results of the study are shown in Figure 1.



1 – curing without UV-effect; 2 – curing with UV radiation for 30 minutes; 3 – curing with UV radiation for 60 minutes

Fig.1. Dependence of the degree of crystallinity on the curing time by UV radiation

It has been established that curing of PF-115 pentaphthalic paint coatings under the UV rays (207 nm) leads to an increase in the degree of crystallinity of pentaphthalic paint coatings. In particular, the degree of crystallinity of the coating cured under natural conditions is 32,35 %, the degree of crystallinity of the coating cured under UV radiation for 60 minutes is 34,20 %. These features of increasing the degree of crystallinity indicate decreasing in the amorphousness of pentaphthalic coatings and an increase in polymerization. It has been found that an increase in the duration of irradiation contributes to an increase in the corrosion resistance and hardness of the coatings.

### REFERENCES

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