

Air grating

The foundation of healthy climate in residential rooms is a properly designed and built ventilation system, which ensures sufficient air exchange, i.e. the amount and quality of air needed for hygiene and sanitary reasons. As a general rule, the amount of air supplied to a room should be equal to the amount of air removed from that room. Nowadays, with buildings having tight external walls as well as window and door joinery, air is supplied to rooms primarily through intake vents, and removed from rooms through ventilation ducts, which are covered by air grating from the room side. Air grating is meant to ensure uninterrupted air flow, which in turn ensures proper functioning of the ventilation system.

Currently, there are no requirements regarding material that should be used for air grating, therefore the visual aspect becomes the main criterion during the purchase. Air grating is available in many shapes, colours and materials. The most popular air grating material is plastic; plastic grating is often selected for its low price.

LIFE CEPLAFIB project is an European consortium alliance, aiming to produce a new recycled material called CEPLAFIB for the packaging, automotive and construction industries. This will be made from deinked pulp (from recycled newspapers), recycled polypropylene and high-density polyethylene. The goal of LIFE CEPLAFIB is to demonstrate that the new material can be produced at a competitive price and that it is suitable for extended manufacturing techniques such as thermoforming and injection moulding.

Instytut Techniki Budowlanej (ITB) in collaboration with Aereco and Alkaz Plastics successfully demonstrated the possibility of producing air gratings from 100% recycled material, i.e. polypropylene regranulate reinforced with cellulose fibres (the material obtained within Ceplafib project) – Fig. 1.



Fig. 1. The view of air grating made of polypropylene regranulate reinforced with cellulose fibres originating in 100% from the recycling of postconsumer wastes such as plastic bottles and newsprint.