

Flat roof: material compatibility with roofing membranes

In the context of roof waterproofing membranes and PV mounting systems, the issue of material compatibility often arises. The material compatibility depends on the material of the protective layer of the mounting system and the material of the roof waterproofing membrane in contact with each other at the contact surface.

In addition to the widely used PVC roofing membranes, there are also roofing membranes made of other materials, such as TPO/FPO, VAE, EVA or VCP. The mounting system manufacturers use materials made of PE, PP or aluminium-backed building protection mats as protection layers.

In this document, novotegra differentiates between the two most commonly used materials, PVC and TPO/FPO, and looks at our protection layers made of PE and PP. The overview table also contains information on other roofing membrane materials.

Plasticiser migration

The material compatibility between the protection layer of the mounting system and the roofing membrane is given if no plasticisers are withdrawn from the roofing membrane and thus no plasticiser migration takes place. This prevents embrittlement of the roofing membrane due to the loss of plasticisers as a result of material incompatibility.

PVC roofing membranes

PVC roofing membranes usually contain volatile phthalate plasticisers, which escape over the years even without the installation of a PV system. With an unfavourable material pairing of the protection layer of the roof sealing, the installation of a PV system can cause or accelerate plasticiser migration.

TPO/FPO roofing membranes

TPO/FPO roofing membranes are made of a mixture of polyethylene (PE), polypropylene (PP) and other polyolefins. They do not contain phthalate plasticisers, are durable and remain flexible over time. This is the advantage of these membranes over PVC roofing membranes, which is why there are generally no material compatibility issues here.

Manufacturer approvals

novotegra is in direct contact with many roofing membrane manufacturers regarding material compatibility in order to obtain a statement on the material compatibility of the PE and PP products we use.

The following table provides an overview of our flat roof systems in combination with a wide range of roofing membranes from various manufacturers.

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Manufacturer	Type of roofing membrane	Material	Systemes
Sika	Sarnafil® TS 77-(15-18-20)	FPO	FR II + FR III
	Sarnafil® TG 66-(15-18-20)	FPO	FR II + FR III
Alwitra	EVALASTIC®	EPDM	FR II + FR III
Wolfin	Wolfin	PVC	FR II + FR III
	Tectofin	PVC	FR II + FR III
	EverGuard	TPO/FPO	FR II + FR III
	Inofin (Vorgänger EverGuard 2018)	FPO	FR II + FR III
	Cosmofin	PVC	FR II + FR III
Firestone	RubberCover	EPDM	FR II + FR III
	RubberGard	EPDM	FR II + FR III
	FPO (UltraPly)	FPO	FR II + FR III
Polyfin	Polyfin®	FPO	FR II + FR III
	Polyfin Duo®	FPO	FR II + FR III
Bauder	BauderTHERMOPLAN	FPO	FR II
	BauderTHERMOFIN	FPO	FR II
	BauderTHERMOFOL	PVC	FR II
VAEPlan	VAEPLAN	VAE/VCP/EVA	FR II + FR III
Köster	KÖSTER TPO Pro	TPO/FPO	FR II
Soprema	FLAGON TPO/FPO	FPO	FR II
ISOPOL	PURelastik	PUR	FR II

Table 1: Manufacturer approvals for material compatibility FR II and FR III