Presented by

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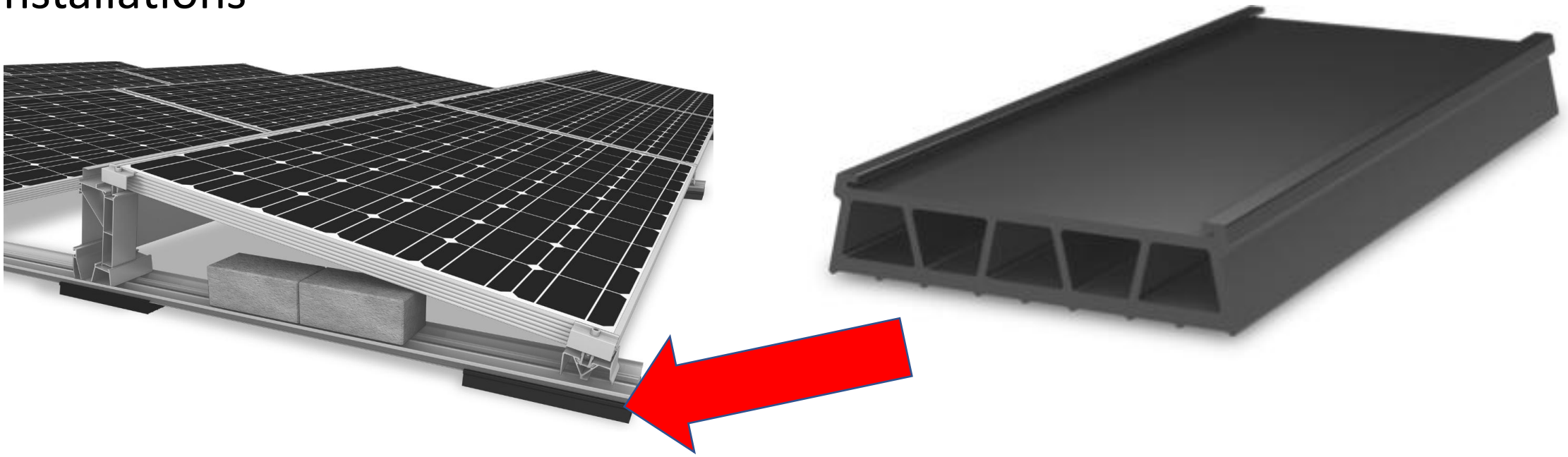
Shear-flexible support pad K2 Systems „Mat V“

EPDM rubber support pad for flat roof installations



Rubber components in flat roof systems

Required properties:

Excellent resistance to Ozone and ultraviolet (UV) light

Excellent weather-proof

Application temperature range from -30°C up to +70°C

Excellent chemical resistance

High friction coefficient und low wear

Good mechanical damping behaviour

Stiffness and hardness optimized for application

No chemical interaction with flat roof materials

Material selection

Cross-linked polymers are preferred: **Elastomers** (**rubber materials**)

Standard processing of rubber blends (profile extrusion)

After cross-linking: Stable dimensions, no melting, not soluble

Carbon black and other additives enhance UV resistance

Fillers (minerals) allow for optimization of hardness, stiffness and mechanical damping

High friction coefficients

Large selection of basic rubber materials

Rubber blends can be optimized for most applications

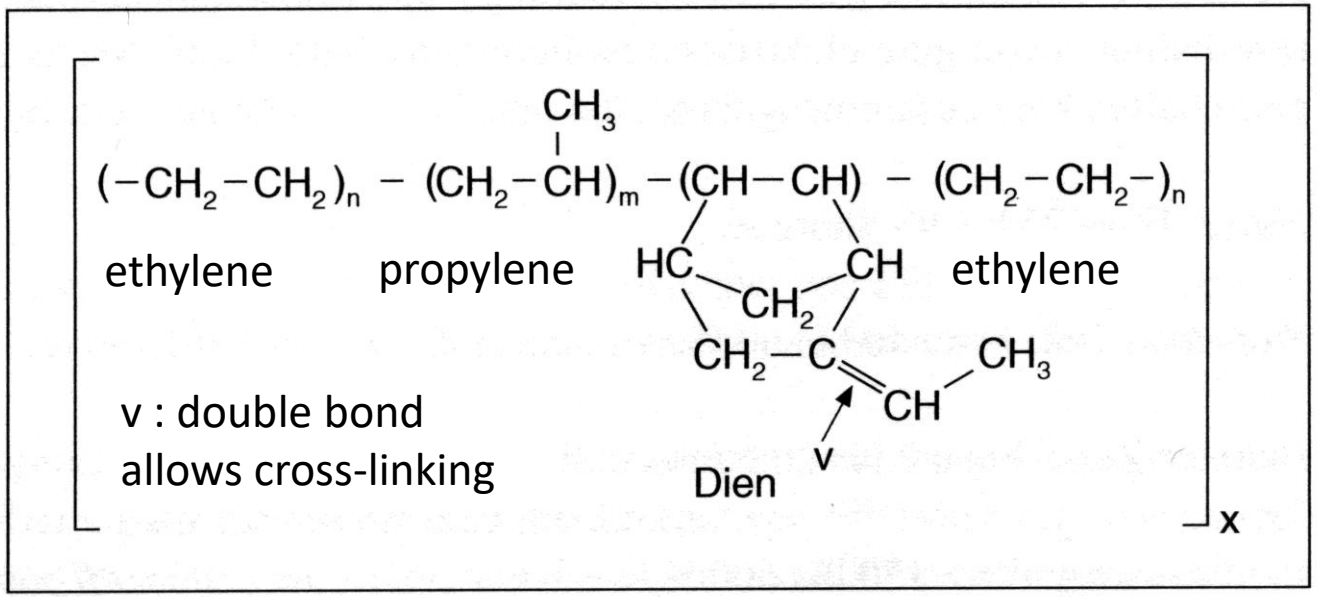
EPDM rubber materials

Terpolymer, monomeric units:

ethylene, **propylene** and **diene** (hexadiene, dicyclopentadiene or ethylidene norbornene)

Double bonds are required for cross-linking reaction (vulcanization) with sulphur and reaction additives

Cross-linked EPDM rubber has no double bonds: **excellent resistance against oxygen, ozone and UV light**



Chemical structure of EPDM, diene component is 5-ethylidene norbornene
(Ref.: K. Nagdi, Gummiwerkstoffe)

Properties of EPDM rubbers

Good weathering behaviour

Resistance to many chemicals

High elasticity and good creep behaviour

Good electrical isolator

Heat-resistant up to 130°C

Cold-resistant down to -50°C

Excellent resistance to: Hot vapor, leaches, acids, salt solutions, polar solvents

Low resistance (swelling) in aliphatic, aromatic, chlorinated hydrocarbon solvents

Weathering of EPDM rubbers

EPDM allows for temperature and humidity changes

Ozone and oxygen resistance is excellent

UV resistance is excellent, may be enhanced by carbon black and other additives

EPDM support pads on flat roofs

Hardness and stiffness are optimized by rubber blend and design

High friction coefficients allow for securely fixed positions

No or very small amount of migrating additives

No or little chemical interaction with flat roof materials

High chemical resistance (many acids, leaches, salts and polar solvents)

Hot vapour resistance up to 130 °C

Swelling in aliphatic, aromatic and chlorinated hydrocarbon solvents

Excellent electrical isolation, may be optimized with additives

Thank you for your attention!

Prof. Dr. Günther Fischer