



Thermoplastic elastomers for footwear

DotFlex

Benic has expanded its product range by offering outstanding new solutions and products to meet all of its clients' desires. Our engineering polymers compounds line shares Benic's DNA: excellence, collaboration, performance and sustainability.



By proposing DotFlex range for footwear segment, BENVIC is broadening its Xtended product line with high performance & personalized compounds.

All our compounds are REACH compliant.



The **DotFlex U** is an innovative material based on elastomer modified Thermoplastic Polyurethane (TPU) that combines in one single product the excellent mechanical characteristics of polyurethane - particularly for its excellent abrasion resistance - and with the processing ease typical of Thermoplastic Elastomers. DotFlex U can actually be transformed by means of standard injection-moulding machines used for TPR (Thermoplastic Rubber).



DotFlex S a footwear compounds based on SBS (Styrene-Butadiene-Styrene block co-polymers) thermoplastic rubbers having a high degree of elasticity thanks to their peculiar block structure. The great success of these polymers relies on their cost-effective and easy processability allowing the production of rubber-like soles without a long and expensive curing process.



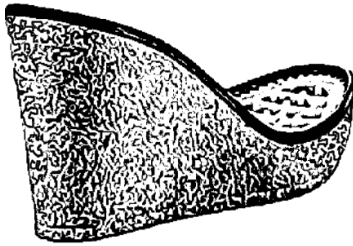
DotFlex O compounds are based on elastomer-modified thermoplastic polyolefins. They are rigid materials characterised by enhanced elastic properties and impact resistance, particularly at low temperatures with excellent lightness and processability. The main applications are in the winter sports' sector, where DotFlex O products are successfully employed in the production of ski boots.



Soles: compact and rubber like. Engineered for all shoe types, including high heels.

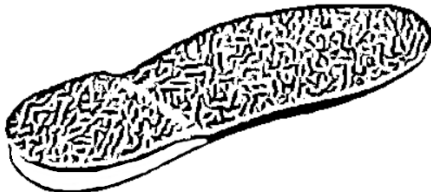
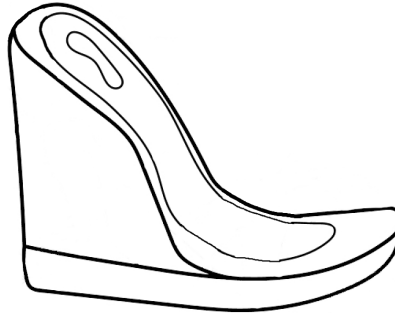
Applications

Peach skin effect: semi-expanded slim or wedge outsole



Light: standard outsole sneakers & fashion shoes.

Extra light: bulky soles, plateau, or wedges.



Compact crêpe: translucent shadow outsole.

Boots Halogen Free: compact for outsole.



Ski boots shell



Medical & garden clogs


























Key benefits

-  **Safe** for humans and the environment
-  **UV resistant** color resistant
-  **Recyclable**
-  **Color** on demand and wide existing color range
-  **Dimensional stability** against thermal stresses
-  **Abrasion resistance**
-  **High flexibility**
-  **Bio-sourced** solution
-  **Lightness**
-  **Resource optimised**
-  **Rubber fill**
-  **Premium looks** and quality



DotFlex U - Elastomer modified TPU

	Type	Density	Hardness	Shrinkage	Moulding	applications or Main features	Benefits
01 - 02	Standard	1.03÷1.10	65 ÷ 85	0.8 - 1.2	160-190 °C	Standard grades Fashion sole	     
01 E	Economic	1.08÷1.10	65 ÷ 90	0.8 - 1.2	160-190 °C	Value grade	    
019-NER1	Recycled Contents	1.10÷1.12	70 ÷ 80	0.8 - 1.2	150-180 °C	Black only	   
00	Transparent	1.08÷1.09	70 ÷ 90	0.8 - 1.2	135-155 °C	Transparency	   
01 L	Excellent	1.04÷1.10	70 ÷ 90	0.8 - 1.7	160-190 °C	Double effect	   






































Product / Process optimization DotFlex footwear does not simply offer compliance with market regulations. Thermoplastic compounds offer easy and fast processability and high aesthetic versatility. Giving value for the customer and society they are fully recyclable and can be reprocessed in a mixture with virgin material. Benvic has taken particular care to produce the new x-tended compounds range at optimum cost.

Value for customer

Technical data sheets, processing recommendations and other supporting data are available upon demand. The information given here above is general commercial information, cannot be considered as a specification can change without prior notice. Benvic also supports customers through continuous adaptation of its products: please contact your nearest sales representative for technical support.

















DotFlex S - SBS based compound for footwear

	Type	Density	Hardness	Shrinkage	Moulding	Main features or applications	Benefits
21 21R	Standard Recycled	0.98÷1.03	50 ÷ 80	0.6	145-165 °C	All opaque colors Dark colors for 21R	  
36	Standard Rubber-like	0.98÷1.01	50 ÷ 85	0.8	135-165°C	All shoe types	   
38	Extra Rubber-like	0.91÷0.95	50 ÷ 85	1.0	140-150 °C	Good mechanical properties	     
20	Expanded	0.96÷0.97	50 ÷ 80	0.0 - 0.4	145-155 °C	Pech skin	  
12SV	Expanded cork-type	0.95÷0.96	50 ÷ 70	0.2	130-150 °C	All colors	    
30-32	Crêpe	0.98÷1.00	50 ÷ 85	0.6 - 1.0	145-155 °C	Honey & brown colour	  
22V	Transparent glass-like	0.91÷0.93	45 ÷ 85	1.0	140-150 °C	Good mechanical properties - Glossy	   
18	Extra light	0.40÷0.80	50 ÷ 90	0	130-150 °C	Middle sole for confort shoes - All opaque colors	   
24	High performance	0.97÷1.00	45 ÷ 85	1.0	140-150 °C	High mechanical pro- perties - Heavy duty	    

Our ongoing development leads to award some series with recycled content, associated to dark colors. Please consult your sales representative for availability.



DotFlex SE - SEBS based compound for footwear

	Type	Density	Hardness	Shrinkage	Moulding	Main features or applications	Benefits
13 Z	Boots Halogen Free	1.02÷1.03	60 ÷ 75	0 - 0.4	160-190 °C	Opaque	  
23 Z	Boots/Clogs Halogen Free	0.98÷1.02	40 ÷ 75	0.1	160-180 °C	Opaque	  
26 Z	Hospital Clogs Halogen Free	0.89÷0.90	60 ÷ 70	0.1	160-180 °C	Opaque	   
27 Z	Boots/Clogs Halogen Free	0.88÷0.90	40 ÷ 70	0.1	160-180 °C	Transparent	   

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DotFlex O - TPO based compound for ski boot

Type	Density	Hardness	Shrinkage	Moulding	Main features or applications	Benefits	
OA0	Ski boots shell	0.88÷0.90	D40 - D60	1.2 - 1.6	170-210 °C	Opaque shadow High resistance to low temperature	
OD0	Ski boots shell	0.88÷0.90	D41 - D55	1.2 - 1.6	170-210 °C	Transparent shadow High resistance to low temperature	



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