



## 2.8 Homologation rules for courses

### 1. Homologated materials:

#### 1.1

SYSTEM	PLAYING AREA	BOUNDARY
Concrete	concrete	metal tubes flat iron
miniaturegolf	concrete fiber-cement plates and similar use-intended plates with approved minimum standards (see annex)	flat iron fiber-cement metal tubes
feltgolf	carpet	hardwood rustproof metal (flat+rectangular) hardwood with integrated iron

**1.2** Playing area regarding miniaturegolf courses specifies the flat surface and straight, sloped and non-modelized plates only; obstacles (including double waves, bridge and middle hill) are not part of this definition and can be built - including frames - from different materials.

**1.3** In principle all materials used for all systems must be stable enough to allow a regular minigolf play.

### 2. Criteria for application of new materials / systems

**2.1** Selective for sport

**2.2** Calculable play

**2.3** Quality of the playing area and the boundaries

**2.4** Fixed obstacles

**2.5** Active members can ask for approval of new materials, obstacle types or new course systems. Documentation of used materials and the statement of the active member must be added. Further documents or materials to find a decision by the Technical Committee can be requested.

- 2.6** Regarding plate materials for miniaturegolf courses active members or commercial organisations can ask on their own expenses WMF for homologation of not yet listed materials by measurements of an independent laboratory. If the results of the measurement are inside the WMF minimum standards defined in Annex 1 the brand of the plate material can be listed in Annex 2 by decision of WMF Executive Committee on recommendation of WMF Technical Committee.
- 2.7** Other final amendments or changes have to be approved by Delegates Conference.

**Annex 1**

characteristic	standard / norm	scale unit		proposal for minimum standard	Notes
Bending tensile strength	DIN EN 12467	N / mm <sup>2</sup>	direction 1	≥17.00	measurement in two directions, test machine "Zwick 1496", test speed 0,5 kN/s
			direction 2	≥26.00	
compression strength	DIN EN ISO 604	N / mm <sup>2</sup>		≥80	test machine "Zwick 1496", test speed 0,5 N/(mm <sup>2</sup> *s)
Flexural modulus	DIN 1048	N / mm <sup>2</sup>	direction 1	≥19000	measurement in two directions, test machine "Zwick 1496", test speed 0,5 N/(mm <sup>2</sup> *s) / higher value means material is stiffer
			direction 2	≥19000	
thermal expansion coefficient	DIN 51045	1 / K	direction 1	≤12,5 x 10 <sup>-6</sup>	measurement in two directions, test machine "Zwick 1496", test speed 0,5 N/(mm <sup>2</sup> *s)
			direction 2	≤12,5 x 10 <sup>-6</sup>	
moisture expansion	DIN EN 1170-7	mm / m		≤4.25	Difference between "completely dry" and "completely wet"
Shrinking	DIN EN 1170-7	mm / m		≤ -2.000	Difference between "completely wet" and "normal dry"

**Annex 2**

Following plate materials fulfill the minimum standards of annex 1:

*Decided at meeting of WMF Executive Committee 14<sup>th</sup> and 15<sup>th</sup> November 2009*

**Eterplan 15 mm**

Eternit AG, Germany

Description Eterplan

review date: 31.12.2014

[www.eternit.de](http://www.eternit.de)

[http://www.minigolfsport.com/rules/2\\_8a.pdf](http://www.minigolfsport.com/rules/2_8a.pdf)

**Eterboard HD 15 mm**

Euro Panels, Belgium

Description Eterboard HD

review date: 31.12.2014

[www.europanel.be](http://www.europanel.be)

[http://www.minigolfsport.com/rules/2\\_8b.pdf](http://www.minigolfsport.com/rules/2_8b.pdf)