PROGAME
by TROCELLEN

PROGAME by TROCELLEN

TAILOR MADE SHOCK PADS

BEKOGR Artificial Turf Expo

Gothenburg, September 4th, 2024

Agenda

BEKOGR
Artificial Turf Expo

1 Introduction

a. Trocellen
b. ProGame
c. References

2 Standards in Europe

a. EN 15330-4 for Shock Pads
b. Examples – individual counties
KNVB/NF/LND/BS

3 Contact

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About TROCELLEN

- Company Facts
- Global Presence
- Business Units

Company Facts Trocellen GmbH

Starting Point
1972

Owner
Furukawa Electrics

Employees
600

Turnover
approx. EUR 120 Mio (2022)

Factories
6 worldwide

Business Units
10

Business Units

Industrial Solution

Adhesives Tapes

Insulation

Automotive

Tro-Chips

Industrial Foams

Sport, Home, Leisure

Footwear

Packaging

ProGame

BU ProGame - History

2007

First m^2 of XC Shock Pad sold in Europe

2010

ProGame brand was established under Trocellen Germany

Invention of XC Plus, Shock Pad for lateral drainage

2014

XC production started in Trocellen Malaysia

Reached 5 million m^2 of ProGame Shock Pad sold worldwide

2017

XC production started in Trocellen Italy

Reached 10 million m^2 of ProGame Shock Pad sold worldwide

2019

XC product patent worldwide

Europäisches Patentamt
European Patent Office
Office européen des brevets

European Patent Office under the number EP07821579

2020

Introduction of BIO based products – sustainability road map

2023

1st installed FIH Dry Hockey pitch worldwide on 9006 XC

2024

Reached 20 million m^2 of ProGame Shock Pad sold worldwide

ProGame - Facts

Years of experience and a high amount of produced square meters are proof of our success.

75+	20+	2000+	20M+
Countries	Years	Pitches	m2

Sport: XC Shock Pads

System Composition

- Turf
- **Shock Pad**
- Subbase

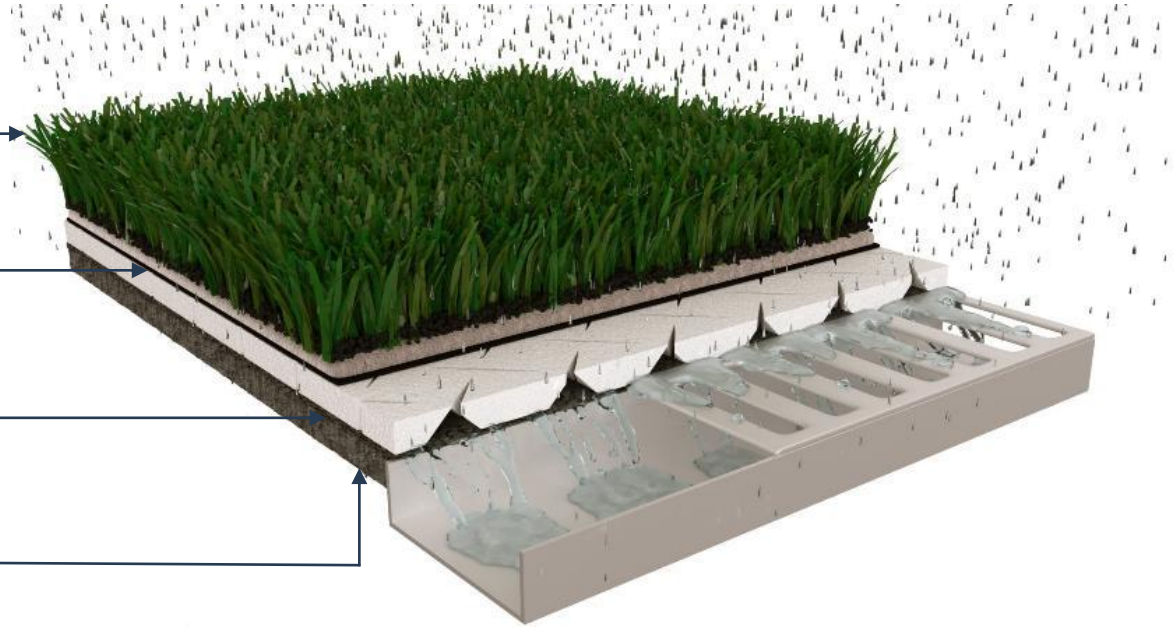
Technical Details

- Density **50–90 kg/m³**
- Thickness **6–14 mm**
- Shock Absorption **25–60 %**
- Vertical Deformation **4,1–8 mm**
- Water Permeability **12500 mm/h**

Sport: XC Plus lateral drainage Shock Pads

System Composition

- Turf
- **Shock Pad**
- Impermeable Layer
- Subbase



Technical Details

- Density **50/70 kg/m³**
- Thickness **10/12/14 mm**
- Shock Absorption **35–48 %**
- Vertical deformation **6,4–8 mm**
- Lateral Drainage **1,57 | 3,71 l/m*h**

References and Projects

Projects in Scandinavia:

Sweden (45)

- BK Häcken (Gothenburg – C 05010 XC)
- Gothia Park Academy (Gothenburg – C 05010 XC)
- Lindangen IP (Malmo – C 05014 XC Plus)
- Mellanhedens IP (Malmo – C 05014 XC Plus)
- Svibacka, Sandviken (Stockholm – C 05012 XC Plus)

Projects for a turf re-installation on our pad:

- Kilmarnock FC (Scottish Premiership)
- Hellmond (Football training pitch, Netherlands)
- Gretna FC (Scottish Lowland League)

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Standards in Europe for Shock Pads

- Overview
- EN 15330-4
- Examples from other countries

Standards for Shock Pads in Europe

Product testing on Shock Pads according:

- ✓ EN 15330-4
- ✓ EN 15330-1
- ✓ NF P90-112 (French norm)
- ✓ KNVB - NOC-NSF (Dutch manual)
- ✓ LND (Italian norm)
- ✓ Nordic Norm

Results:

- Performance (SA & VD)
- Dimensional stability
- Tensile strength
- Water permeability
- Durability
- Lateral drainage
- Toxicology and Environment compatibility

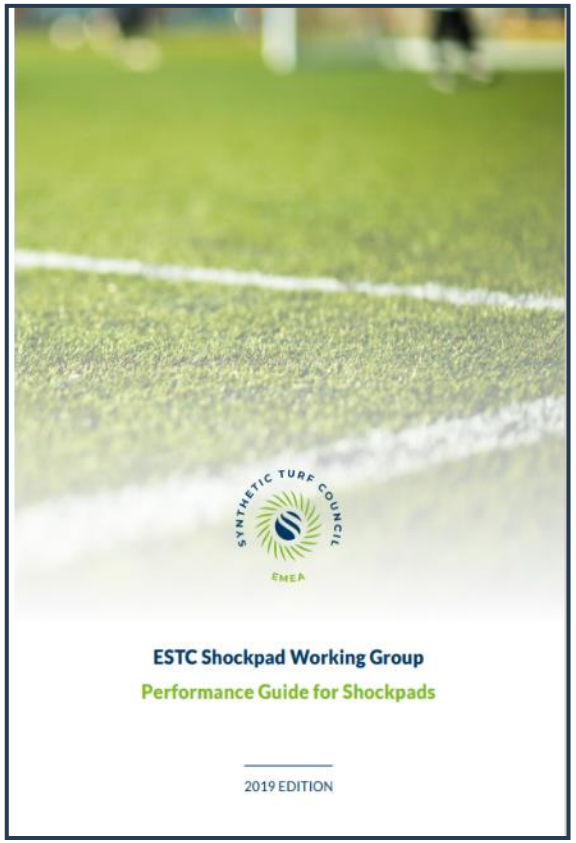
FIFA QUALITY

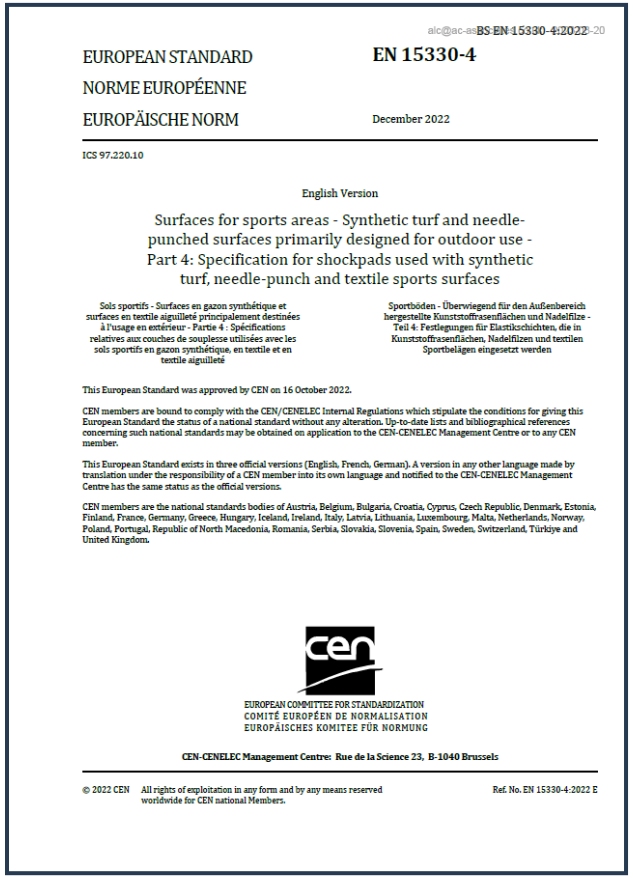
FIFA QUALITY PRO

QUALITY PROGRAMME FIH ENGINEERED FOR HOCKEY

WORLD RUGBY Regulation 22

EN 15330-4 Development



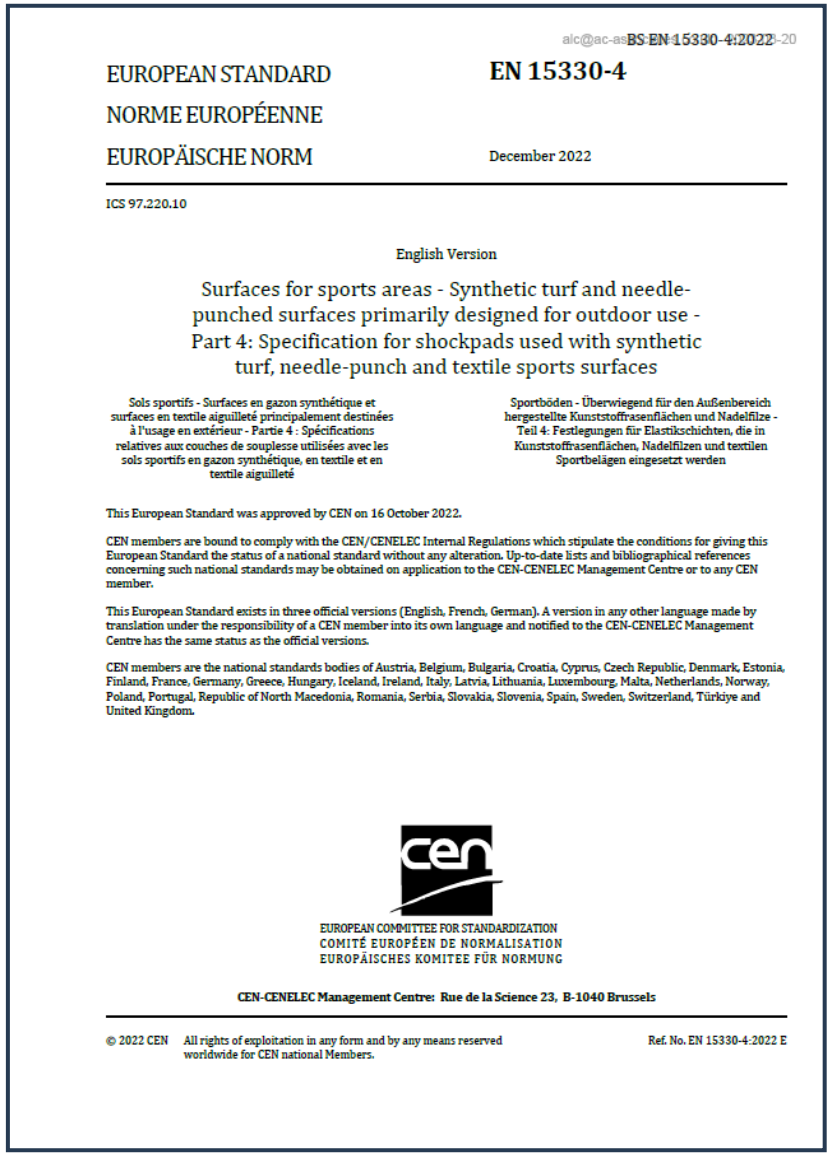


ESTC – taking the lead in setting standards

EN 15330-4
Scope

This document specifies minimum performance and durability requirements for shockpads used within synthetic turf and textile sports surfacing systems.

The document also specifies appropriate performance tolerance for production and on-site quality control procedures.



alc@ac-as BS EN 15330-4:2022 -20

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15330-4

December 2022

ICS 97.220.10

English Version

Surfaces for sports areas - Synthetic turf and needle-punched surfaces primarily designed for outdoor use - Part 4: Specification for shockpads used with synthetic turf, needle-punch and textile sports surfaces

Sols sportifs - Surfaces en gazon synthétique et surfaces en textile aiguilleté principalement destinées à l'usage en extérieur - Partie 4 : Spécifications relatives aux couches de souplesse utilisées avec les sols sportifs en gazon synthétique, en textile et en textile aiguilleté

Sportböden - Überwiegend für den Außenbereich hergestellte Kunststoffrasenflächen und Nadelfilze - Teil 4: Festlegungen für Elastikschichten, die in Kunststoffrasenflächen, Nadelfilzen und textilen Sportbelägen eingesetzt werden

This European Standard was approved by CEN on 16 October 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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Ref. No. EN 15330-4:2022 E

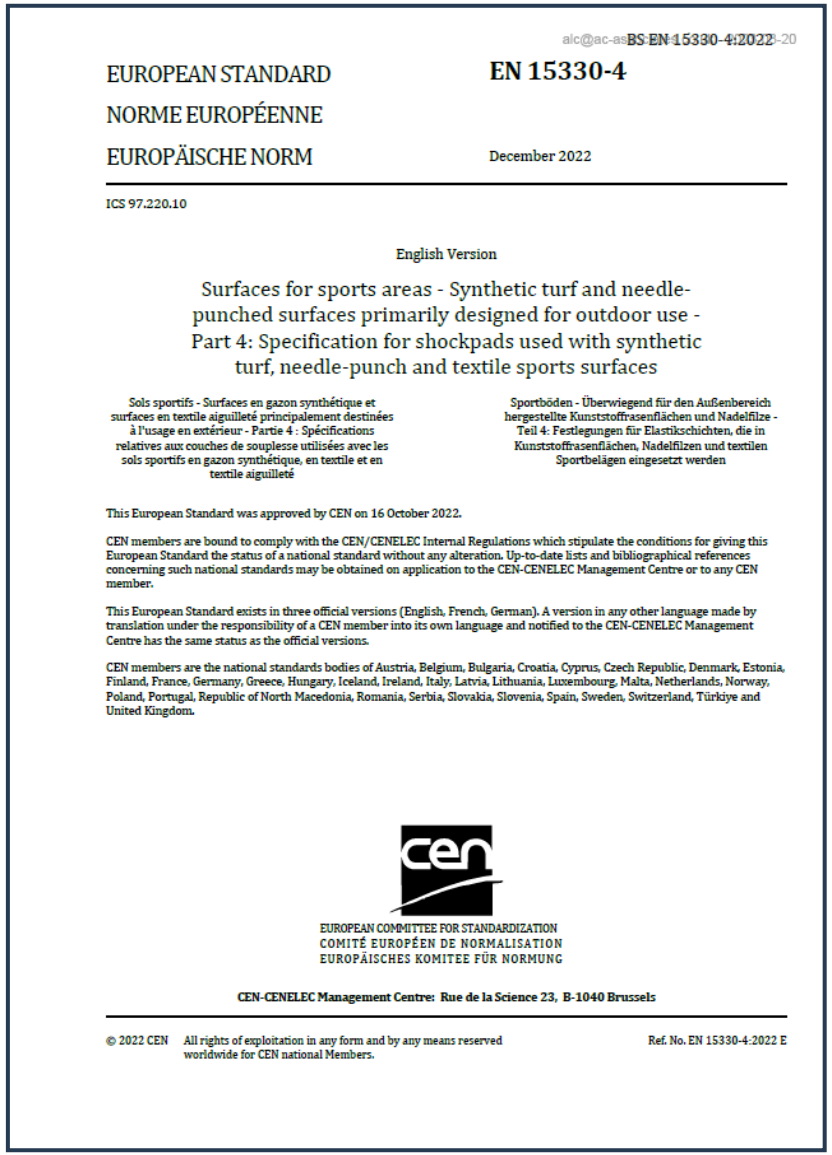
EN 15330-4
What types of products are covered

The Standard applies to all types of shockpad used within sports fields:

- Pre-fabricated rolls
- Pre-fabricated tiles
- Bound rubber granulate insitu shockpads
- Bound rubber granulate aggregate elastic layers
- Fibre and textile shockpads

To be considered as a shockpad, a product needs to provide shock absorbency of at least 20% (AAA).

The standard does not apply to structural drainage cells or consider the structural performance of some combined drainage cells/shockpads



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EN 15330-4
Product Identification

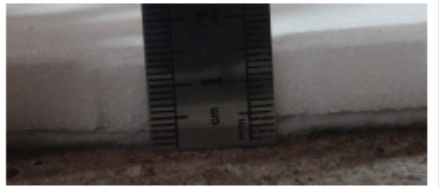
The EN report clearly identifies the product tested in laboratory. Stating the product name, the manufacturer and a picture of the product.

This together with the physical properties of the product listed afterwards leads to a clear and unique product identification.

EN 15330-4 Shockpads - Laboratory Test Report

Report Number: 13358/8623

Product Description	
Product Name:	ProGame 5012 XC-Cut
Product Type:	Prefabricated shockpad
Product Description:	Cross-linked polyolefin foam
Nominal Thickness:	12 mm Foam + non-woven textile layer
Substrate:	Rigid Engineered Base

Sample Image [Plan View]:	Sample Image [End Elevation]:
	

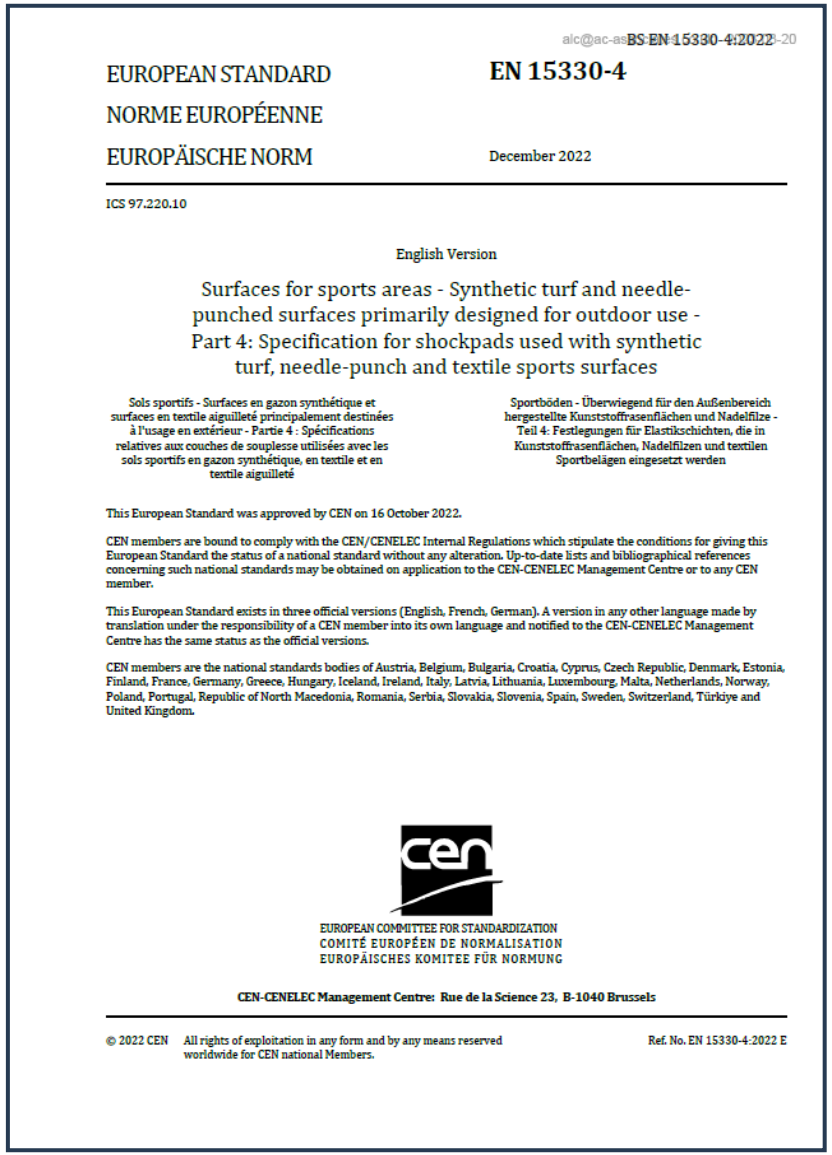
Sample Reference			
Laboratory Job No.		13358	Date Received
Sample Reference No.	Shockpad	8623	08/03/2023
Ambient Temperature Range During Testing		21.0 – 25.0 °C (unless otherwise stated)	
Ambient Humidity Range During Testing		40 – 60 %	

Physical Properties			
Property	Test Method	Test Condition	Mean Result
Thickness	EN 1969:2000 Method A	As supplied	13.2 mm
Mass per unit area	ISO 8543: 2020	As supplied	751 g/m2
Physical Properties of Prefabricated Foam and Foam Chip Shockpads			
Chemical Composition	ISO 11357-3:2018*	As supplied	Polyolefin
Volume Weight	ISO 845:2006*	As supplied	56.9 kg/m3

* Not all tests carried out are within our scope of ISO 17025 accreditation.

EN 15330-4
Performance requirements

- Shock absorption
  - Tests @ 23°C, 40°C, and 5°C
  - Optional test at -5°C on wet (frozen) sample
  - Results classified based on performance over temperature range
- Vertical Deformation
- Water permeability
- Vertical infiltration
- Horizontal drainage (optional)
- Tensile properties
- Determination of dimensional stability
- Resistance to dynamic fatigue by repeated pounding
- Resistance to Permanent Deformation after short-term loading
- Resistance to Permanent Deformation after Static Loading
- Thermal conductivity
- Product properties



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EN 15330-4 conclusion

Shock pads which comply with the new norm – are extensively tested on performance, longevity and to the toxicology and environment compatibility

in laboratory.

High quality and long-lasting products which also comply with international rules and bodies such as FIFA and FIH

Will the European countries (municipalities) adopt the new norm ?

SPORTS LABS

TESTING TECHNOLOGY FOR SPORT

Shockpad Analysis Report

EN 15330-4:2022

Specification for shockpads used with synthetic turf, needle-punch and textile sports surfaces

ProGame 5012 XC-Cut

Report Number: 13358/8623

Report Status: Final

Client: Trocellen GmbH
Mülheimer Straße 26
Troisdorf 53840
Germany

HEADQUARTERS
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Livingston EH54 9DE
Scotland, United Kingdom

Tel: +44 (0) 1506 444 755
Email: info@sportslabs.co.uk
Web: www.sportslabs.co.uk

Registered in Scotland. SC 186755

REGIONAL LOCATIONS
- England
- Italy
- Morocco
- Netherlands
- Norway
- South Africa
- Turkey
- United States

Page 1 of 10

National Standards for Shock Pads

Italian Norm

LND – Lega Nazionale Dilettanti

Product certification and lab tests according national norms and EN norm.

MODULO DI RICHIESTA ATTESTAZIONE

SOTTOTAPPETO ELASTICO

LND IMPIANTI S.r.l.

LABORATORIO - SETTORE ATTESTAZIONI

NB: Il presente modulo va compilato integralmente e inviato in formato PDF.
Si rimanda alla Procedura Unica di Attestazione per l'insieme dei documenti necessari.

BARRARE I CAMPI BIANCHI NON COMPILATI

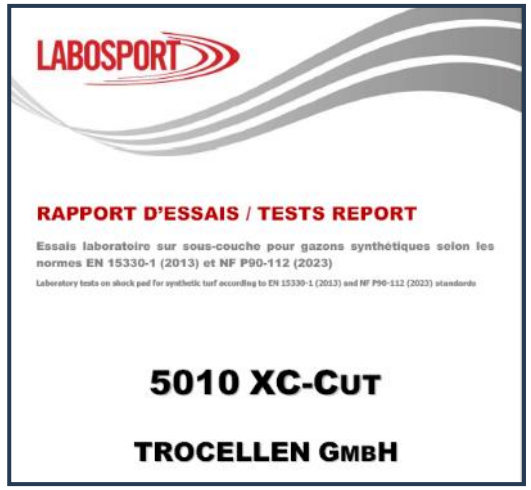
Data di trasmissione della richiesta: 7 giugno 2024

	PRODOTTO PRESENTATO PER L'ATTESTAZIONE
Nome commerciale univoco del prodotto	XC PLUC 5012 IT
Codice univoco del prodotto	XC PLUC 5012 IT

French Norm

NF P90-112: Sports grounds – Synthetic turf surfaces for outdoor sports areas

Laboratory tests on shock pad for synthetic turf acc. To EN 15330-1 and national NF standard.


LABOSPORT

RAPPORT D'ESSAIS / TESTS REPORT

Essais laboratoire sur sous-couche pour gazons synthétiques selon les normes EN 15330-1 (2013) et NF P90-112 (2023)

Laboratory tests on shock pad for synthetic turf according to EN 15330-1 (2013) and NF P90-112 (2023) standards

5010 XC-CUT

TROCELLEN GMBH

Dutch Manual from KNVB

Manual for artificial turf football pitches only.

Laboratory and Field requirements for turf systems and components (close to FIFA manual 2015)

Handleiding kunstgras voetbalvelden

Handleiding kunstgras voetbalvelden

Sportinfrastructuur kwaliteitszorgsysteem

13 september 2023

National Standards for Shock Pads

Scandinavian Norm

Nordic Test Certificate

Product identification laboratory tests of system and components according EN standards. Compliance with supplier declaration.

NORDIC TEST CERTIFICATE

VALID FOR SWEDEN, NORWAY, DENMARK, ICELAND, FEROE ISLANDS, FINLAND

All tests hereafter are based on EN- Standards also used by FIFA
Etterfølgende tester er basert på EN-Standarder også benyttet av FIFA

Turf system producer Kunstgressprodusent		
Turf product (brand name) Kunstgressets navn (varemerke)		
Turf product (code) Kunstgressets typebetegnelse		
Test applicant (address, phone, e-mail) Søkers navn, adresse, telefon mm.		

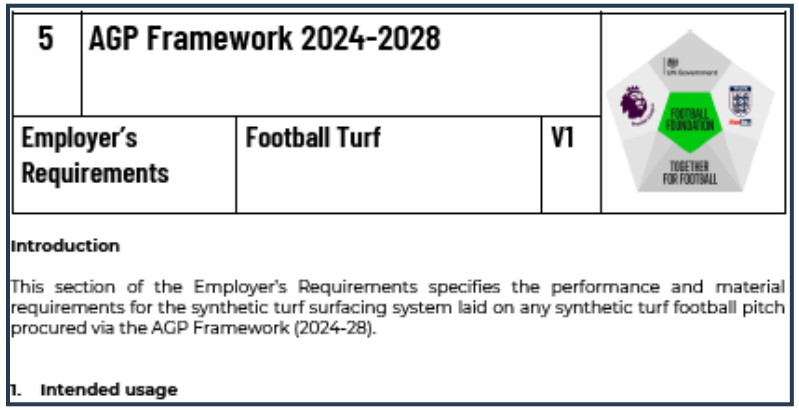
TURF COMPOSITION
KUNSTGRESSETS OPPBYGGING

Product / System declaration of the turf manufacturer, refer to pages 3 to 5
Kunstgressprodusentens deklarasjon av kunstgress-systemet (jf. side 3-5).

Football Foundation (England)

AGP Framework paper (mandates EN 15330-4)

Specifies the performance and material requirements for the synthetic turf surfacing systems laid on any synthetic turf football pitch



5	AGP Framework 2024-2028	
Employer's Requirements	Football Turf	V1

Introduction

This section of the Employer's Requirements specifies the performance and material requirements for the synthetic turf surfacing system laid on any synthetic turf football pitch procured via the AGP Framework (2024-28).

1. **Intended usage**

National Standards for Shock Pads

General

European standards need to be reviewed regularly and are normally adjusted to modern/new ways of construction. That means the test reports needs to be renewed every couple of years.

The new EN 15330-4 as well as the new FIFA manual and FIH manual requires producer names, product name and pictures of the shock pad.

It is up to the end customer to verify that which systems/components were specified in the tender are also matching with the products arriving on-site for installation.

3

Contact

Contact

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www.progame-shockpads.de

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-
Let's speak about your project