

A Material Difference

# Dryflex<sup>®</sup> Cable

Low Smoke, Zero Halogen (LSZH)  
Materials for Cable Applications



 **HEXPOL<sup>®</sup>**  
TPE

# CONTENTS

Introduction →

Key Properties →

Application Areas →

Anatomy of a Cable →

Bedding Materials - Product Data →

Low Voltage / Sheathing Materials - Product Data →

Low Voltage / Sheathing Materials Grades with Improved Sustainability - Product Data →

Low Voltage TPV Materials - Product Data →

Processing Guidelines →

# Introduction

**The wire and cable industry is a high growth marketplace.** With electrification trends and an increasingly connected, global population the demand for power and telecom products is expanding rapidly. Alongside this growth comes the introduction of **stricter regulations** and industry standards to **protect people and infrastructure**.

To help industry meet these demands we have put our **50+ years' experience in polymer compounding** into developing one of the most comprehensive portfolios in the market. The Dryflex Cable compounds are designed to meet the **highest levels of durability, performance and human safety**.

## **A Word About Customisation...**

In this guide we show typical properties for our most common grades, these tables are not exhaustive and by no means list all available properties and materials. Our aim is to supply a material that precisely matches application requirements, and, where an existing grade cannot satisfy the specific demands of your application, we have the proven expertise to customise a material that will.

Please use this guide as an introduction to our **Dryflex Cable** range and [contact us](#) to discuss your specific requirements.

# Market Leading Performance, Across a Range of Polymers

The challenge we set ourselves was to develop materials that exceed global standards for **reliability** and **durability**, combined with the lowest toxicity and smoke levels for **human safety**.

The Dryflex Cable family includes grades based on different polymer chemistries, including **EVA**, **TPE** and **TPV** technologies. This brings one of the **widest ranges of properties and customisation possibilities** to the market and gives cable manufacturers the flexibility to select the best solution for their application.

As part of the **HEXPOL Group**, this is further strengthened with our sister companies offering EPDM, CPE, Silicone and Thermoplastic Cable Compounds.



[HEXPOL Group Wire & Cable Overview >](#)

# Improved Fire Performance with Low Toxicity

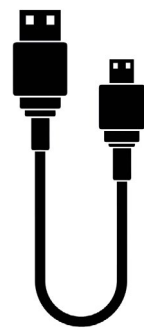
The Dryflex Cable range includes Low Smoke Halogen Free (LSHF) or Low Smoke Zero Halogen (LSZH) flame-retardant compounds.

They are designed to offer enhanced flame-retardant properties with low smoke and toxicity. The compounds are RoHS, SVHC and REACH compliant and halogen-free according to IEC 60754 Part 1/2.

## Key Properties

- LSZH Low Smoke Zero Halogen
- RoHS, SVHC and REACH compliant
- Superior ageing performance
- Easy processing, with no post vulcanisation required
- Designed to meet various cable standards (e.g. BS 7655 LTS 3)
- Typical Oxygen Index values between 28 and 42%
- Closed loop recycling possible

# Application Areas



## DATA CABLES

Low voltage (<1KV) cables for network infrastructure, data and control systems.

< 1KV

## LOW VOLTAGE

End user power distribution from substations.

Adjacent-to and within buildings.

< 60KV

## MEDIUM VOLTAGE

Higher voltage applications.

Transmission or distribution from substation to end users.

< 400KV

## HIGH VOLTAGE

Very high voltage applications.

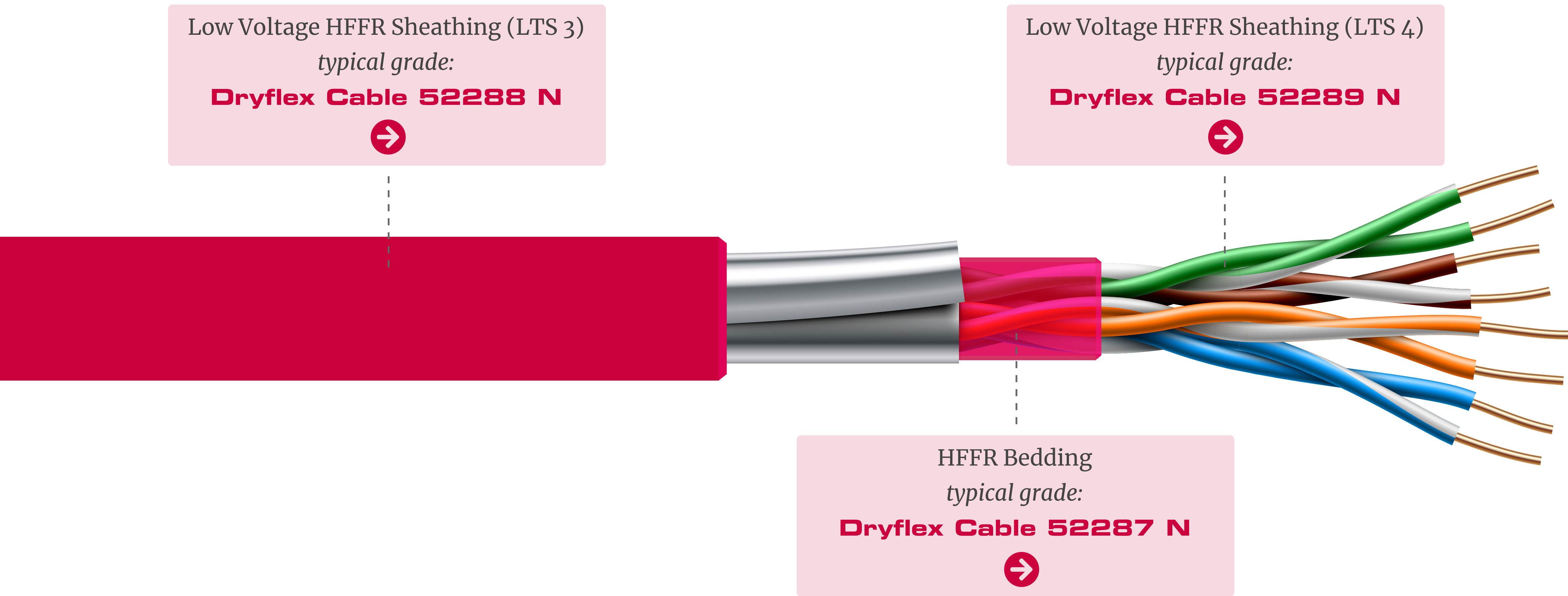
Power generation to transmission substations.

Our materials give added security in areas of **high human occupancy**, where people need to be evacuated quickly and safely.

They can also be used in locations containing **expensive or sensitive equipment**. Such as hospitals, airport, train and transport hubs, communication exchanges, power generation facilities and offshore platforms.

With enhanced thermomechanical properties we have grades suitable for **telecommunication** and **electric** cables.

# Anatomy of a Cable



# Typical Bedding Grade: Dryflex Cable 52287 N

Grade	Hardness <sup>1</sup> ISO 868 Shore D	Oxygen Index % ISO 4589-2	Halogen Content <sup>2</sup> IEC 60754 Part 1/2	Tensile Strength Extruded Tape ISO 37	Elongation at Break ISO 37	Designed to Meet the Requirements of the Following Specifications
Dryflex Cable 52287 N	52	Min. 34	Levels Below Requirements	10	> 150	BS 6724

<sup>1</sup> After 3 seconds  
<sup>2</sup> < % Halogen Level Requirements

# Typical Low Voltage Insulation / Sheathing Grades

Suitable for thin wall applications

Grade	Hardness <sup>1</sup> ISO 868 Shore D	Oxygen Index % ISO 4589-2	Halogen Content <sup>2</sup> IEC 60754 Part 1/2	Tensile Strength Extruded Tape ISO 37	Elongation at Break ISO 37	Designed to Meet the Requirements of the Following Specifications	Special Features
Dryflex Cable 52180 N	52	Min. 42	Levels Below Requirements	13	> 130	LTS 3	General Purpose
Dryflex Cable 52288 N	52	Min. 42	Levels Below Requirements	12	> 150	LTS 3	Improved Elongation
Dryflex Cable 52140 N	52	n/a	Levels Below Requirements	10	> 150	-	Ceramifiable High Char
Dryflex Cable 52289 N	52	Min. 40	Levels Below Requirements	12	> 200	LTS 4	Hot Pressure at 90 °C

<sup>1</sup> After 3 seconds  
<sup>2</sup> < % Halogen Level Requirements

# Low Voltage Insulation / Sheathing

## Grades with improved sustainability

The supplier’s LCA (Life Cycle Analysis) data for the flame retardant filler in these materials shows a reduction in environmental impact, when compared to conventional flame retardant filler.

Grade	Hardness <sup>1</sup> ISO 868 Shore D	Oxygen Index % ISO 4589-2	Halogen Content <sup>2</sup> IEC 60754 Part 1/2	Tensile Strength Extruded Tape ISO 37	Elongation at Break ISO 37
Dryflex Cable 52306 N	52	Min. 36	Levels Below Requirements	9.5	> 115
Dryflex Cable 52307 N	50	Min. 30	Levels Below Requirements	8.8	> 105

<sup>1</sup> After 3 seconds  
<sup>2</sup> < % Halogen Level Requirements

# Low Voltage TPV Grade for Insulation with Increased Thermal & Fluid Resistance: Dryflex Cable 51898 N

Grade	Hardness <sup>1</sup> ISO 868 Shore A	Oxygen Index % ISO 4589-2	Halogen Content <sup>2</sup> IEC 60754 Part 1/2	Tensile Strength Extruded Tape MPa ISO 37	Elongated at Break Extruded Tape ISO 37	Heat Ageing 7 Days at 125 °C			Oil Resistance: IRM 902 oil, 7 days at 90 °C		
						Hardness change <sup>1</sup> ISO 868	Tensile Change ISO 37	Elongation Change ISO 37	Hardness change <sup>1</sup> ISO 868	Tensile Change ISO 37	Elongation Change ISO 37
Dryflex Cable 51898 N	92	Min. 28	Levels Below Requirements	10.5	250	+1	+29	-27	-12	-5	-29

<sup>1</sup> After 15 seconds  
<sup>2</sup> < % Halogen Level Requirements

# Processing Guidelines

The Dryflex Cable compounds can be processed using standard **extrusion** equipment. Compounds are available ready to use, with no post vulcanisation required, helping to minimise steps and improve productivity. The compounds are recyclable in processing, and any production waste can be reprocessed.

L/D Ratio:

20:1 - 24:1

Compression Ratio:

1.5 - 2.0

Spacer Ring:

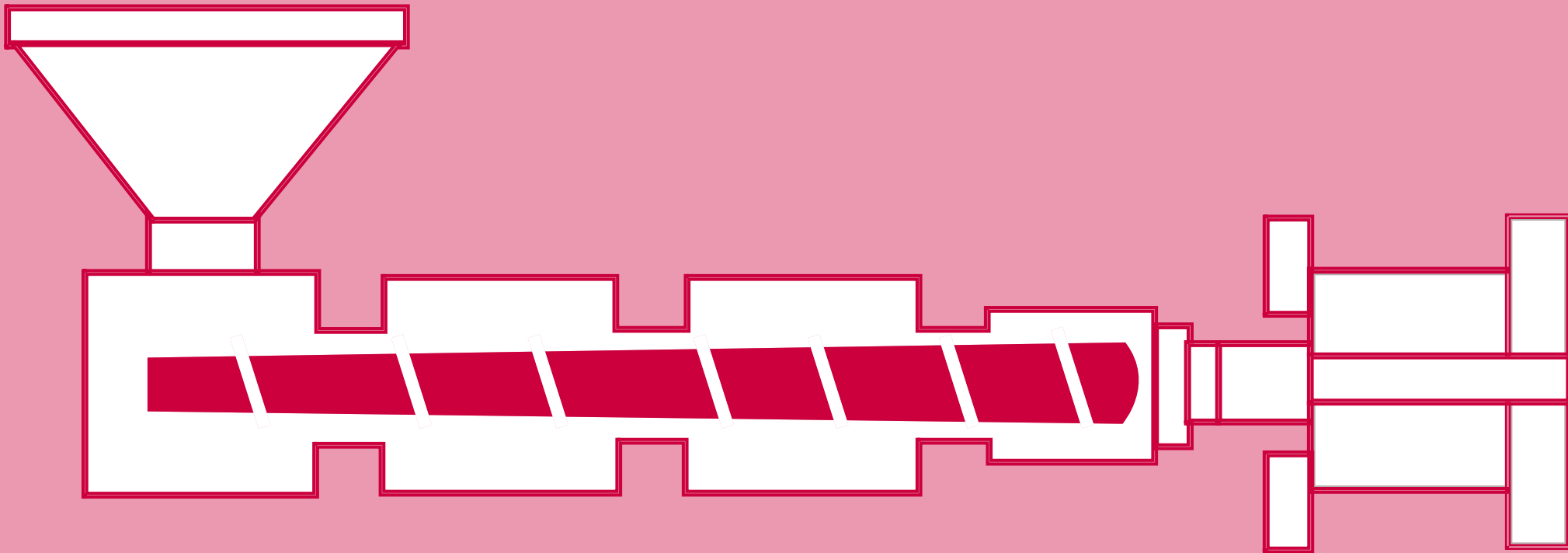
Recommended

Draw Down Ratio:

0 - 10%

Cooling:

Cold water bath



Recommended start-up temperatures °C

130 ----- 165

165 - 170

# Processing & Storage

In general these grades do not require pre-drying. However, after periods of prolonged storage pre-drying may be necessary or may in general give a better surface finish.

Dryflex Cable compounds typically contain a flame-retardant filler that activates at approximately 180°C, care should be taken not to exceed this temperature to prevent the generation of gases.











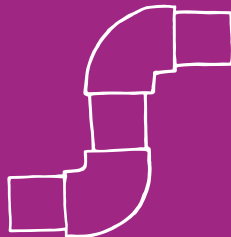


It is recommended to try and achieve a process temperature around 165°C to 170°C.

The extruder head should ideally have deep flow channels. Any extension pieces connecting the extruder and the head should also be set around 160°C to 165°C. The flow path for the material should generate as little shear and friction as possible. Venting of extrusion lines may be used as a method of preventing the build-up of volatiles during continuous processing.

*This processing information is only intended as a guide. The actual parameters will depend on the machine used and the cable being produced.*

# More Dryflex TPE Ranges

Click for more information

<div>Dryflex® 2K</div> <div>2K</div>	<div>Dryflex® AM</div> <div></div>	<div>Dryflex® Antimicrobial</div> <div></div>	<div>Dryflex® C</div> <div></div>	<div>Dryflex® Circular</div> <div></div>
<div>Dryflex® CS</div> <div></div>	<div>Dryflex® DW</div> <div></div>	<div>Dryflex® Flam</div> <div></div>	<div>Dryflex® Green</div> <div></div>	<div>Dryflex® HiF</div> <div></div>
<div>Dryflex® Interior</div> <div>VOC</div> <div></div>	<div>Dryflex® PS</div> <div></div>	<div>Dryflex® T</div> <div></div>	<div>Dryflex® Touch</div> <div></div>	<div>Dryflex® TPV</div> <div>TPV</div>

# ABOUT US



[info@hexpolTPE.com](mailto:info@hexpolTPE.com) | [www.hexpolTPE.com](http://www.hexpolTPE.com)

**80,000+**  
**T/P.A. CAPACITY**

Across our Sweden, UK, German, China & North America operations. [Our companies](#)

**50+**  
**YEARS HISTORY**

We've a proud history in flexible polymer compounding & were among the 1st to produce TPEs in Europe. [About us](#)

**34,795+**  
**FORMULATIONS**

A comprehensive portfolio in TPE, TPS, TPO, TPU, TPV, soft PVC & Biobased technologies. Learn more about [Our products](#)

We provide written and illustrated advice in good faith. This should only be regarded as being advisory and does not absolve customers from doing their own full-scale tests to determine the suitability of the material for the intended applications. You assume all risk and liability arising from your use of the information and/or use or handling of any product. HEXPOL TPE makes no representations, guarantees, or warranties of any kind with respect to the information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Figures are indicative and can vary depending on the specific grade selected and the production site. We retain the right to make changes without prior notice. HEXPOL and Dryflex are trademarks of HEXPOL Group, registered or used in many jurisdictions worldwide.