

# CABLE SOLUTIONS FOR SUSTAINABLE BUILDING

FOR A HEALTHIER AOTEAROA NEW ZEALAND



**Nexans**  
BRINGS ENERGY TO LIFE



## **An evolving industry requires future thinking companies that take responsibility and care for people and nature...**

**Nexans New Zealand has been in business for over 50 years, playing a pivotal role in the development of the Taranaki region and New Zealand since 1967.**

**Our business purpose is to live our core values by ensuring our products offer lasting benefit to all our key stakeholders - People, Partners, Products and our Planet.**

We must all help and work together to solve climate heating; promote healthy resilient communities; remove toxicity from our industry; build vital biodiversity and importantly empower people by addressing inequality and exclusion. Nexans is proud to play a leading role in creating our prosperous future.

### **Our People**

We have been contributing to the NZ economy as an innovative and local manufacturer and supplier of electrical products and cable. This means local jobs, many of them longstanding families embedded in our business, proudly working alongside the upcoming generations.

Committed to a supportive workplace, we value individuals and diversity at all levels of

our business and continuously empower our employees to engage on social responsibility issues.

### **Our Partners**

We maintain a sustainable stakeholder relationship by embedding leadership based on compliance. All our vendors agree to and sign our corporate social responsibility charter. This covers our approach to a sustainable future and ethical trade with a commitment to take actions that avoid illegal behaviour and un-ethical material sourcing.

With a solutions focus, we have partnered with our community for positive and rapid change in New Zealand. Working with organisations such as Living Future NZ Rākeiora, to promote transformational Living Buildings, which eliminate Red List toxic chemicals, and also the NZGBC to accelerate the development and adoption of market-based green buildings in New Zealand.

### **Our Products and Our Planet**

Our experienced business teams work together with both customers and suppliers to learn about and enable a sustainable circular economy whilst operating within a competitive market.



**Best Outcome** - We guarantee collaboration with our stakeholders, with the view to optimising resource and labour efficiency.

**Nexans Take Back** - We have an end-of-life management system, this is our promise to accept back cables and drums for reuse or recycling that are no longer serviceable. To grow this and support our industry well, we need active partners so please get in touch if you would like to learn more.

Building Products and their supply chains in New Zealand are not inherently sustainable. Many contain Red List (worst in class) toxic chemicals that are harmful to people and planet. At end of life, building materials contribute 40–50 percent of New Zealand’s total waste to landfill. This is a huge opportunity to avoid waste and carbon emissions and preventing harm to living beings.

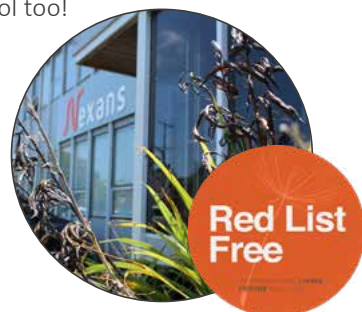
To help create healthy and sustainable buildings in New Zealand, we have developed a unique offering.

Our Envirolex® and Alsecure® **select** range of **cables** are **50-89% recyclable** at end of life, and made with non toxic and **PVC free** materials that **last over 50 years**.

We are incredibly proud to have designed our PVC free product ranges. These cables are Red List Free (from harmful chemicals) and the ingredients are transparently shared with the International Living Future Institute Declare program. These products have a 'Red List Free' Declare label status suitable for the stringent Living Building Challenge program.

**Our Envirolex® and Alsecure® cables meet the Living Building Challenge **Materials Petal Imperatives I-12** for **Responsible Materials** and Imperatives **I-13** for **Red List Free** and **I-14 Responsible Sourcing**. Credit is available for **I-14 Living Economy from local manufacture**.**

Our Declare label also contributes credit in the NZGBC’s HomeStar, residential green building tool too!



# INTEGRATED DESIGN

Integrated Design for optimal cost, install and performance solutions. Talk to Us...

We really know our products and their full capabilities to offer value to you and your project. The sooner you start a conversation about your electrical needs and aspirations for green building and safety outcomes, the better we can help you make critical specification selections and decisions. The optimal solution has many drivers and Nexans can help you plan for success.

# ENERGY EFFICIENCY

From a Living Building Challenge Core Imperative view, reducing energy consumption and operating expenses of the asset should be a major consideration and part of an initial design plan.

Installing a **larger conductor size** and running at a **lower temperature** is best practice and a **one-off cost** which could give a return in as little as two years. Our cables are designed to **last for over 50 years**, so the extra cost of larger cables will be paid back many times over while **allowing for additional loads in the future**.

Running cable in residential and commercial installations is basic Ohms Law and all about minimising the cost of energy losses caused by resistive heating. Running a smaller cable at a higher temperature is a short-term approach.

Voltage drop is not the only calculation you need to consider when choosing the right cable. While voltage drop is obvious because it is proportional to load, power loss is proportional to the voltage drop because of the resulting rise in current.

As an example, lost electricity exits the cable as heat, which increases cooling costs in commercial buildings. To illustrate how much energy is being wasted, the heat loss of running a 16 mm<sup>2</sup> cable at 90° is 12.5 watts per metre and for a 110° rated cable with the same cross section running to its maximum capacity, the power loss is 20.2 watts for every metre of cable length. This wastes enough power to run an LED downlight every metre.

There are **inefficiencies** and **increased energy losses** by running cables at **higher temperatures**. The easiest way to reduce losses is to **reduce** either the **current or the resistance** and if you cannot predict future loads, the best approach to **lowering resistance** is by installing a larger cable with a **greater conductor cross section** to carry the current.

Other areas to consider, when cable sizing should include environmental impact, install conditions such as adjacent circuits, space available and bending radius. An obvious choice is our Envirolex® and Alsecure® Single Core LSZH flexible cables. Our team are here to support the market for a more sustainable investment, both for asset and for the environment.

# NEXANS DECLARE LABEL STATUS

Nexans New Zealand participate in and support Declare, a critical product ingredients transparency platform. Declare is also an international product database transforming the materials marketplace.

The Declare Label provides nutrition information for building products. Designers and developers who value transparency and long term health, use the system to check which materials are free of red List chemicals.

Declare was developed by the International Living Future Institute (ILFI). The global Red List is a database of the worst in class toxic chemicals known to be carcinogenic, hormone and fertility disrupting and affect the human nervous and respiratory systems. These chemicals are common in the building industry and are a hazard to health by polluting the environment, bio-accumulating up the food chain to reach toxic concentrations which harm building occupants, construction and factory workers.

We received **Red List Free Declare status** in 2019 for all our **Envirolex®** and **Alsecure®** product ranges. Our products meet this prerequisite to support **green projects** attempting ratings such as NZGBC **Home Star**, ILFI's transformational **CORE** and **Living Building Challenge** standards.

Envirolex® and Alsecure® products have been specified for many environmental building initiatives to date, including the Living House Living Building Challenge in Auckland, Camp Glenorchy Eco Retreat near Queenstown, and other commercial projects.

For more information, visit:

<https://declare.living-future.org/>

<https://living-future.org/lbc/>

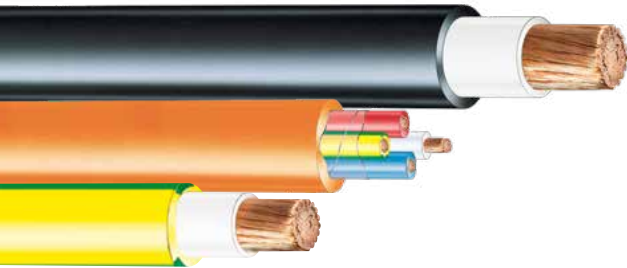


# ENVIROLEX®

Envirolex® is a comprehensive range of cables that are typically used for mains/sub mains, final circuits connecting to electrical devices, lights, lifts etc for hospitals, office buildings, tunnels, public high traffic areas and emergency exits.

Being PVC Free, Envirolex cables are also suitable for lower temperatures (-25°) and non-migratory applications.

Made with **low smoke zero halogen (LSZH)** materials, making them **PVC free** and engineered to **reduce environmental impact** under fire conditions.



## Construction

Single and Multicore flexible  
Cu Conductor (Class 5)  
Single Core X-HF-110 insulated  
Multi Core X-90 insulated  
Single Core HFS-110-TP sheathed  
Multi Core HFS-90-TP sheathed  
(low smoke zero halogen)

## Operating Temp

Single: Suggested Max 110°C / Min -25°C  
Multi: Max 90°C / Min -25°C

## Standards

AS/NZS 5000.1  
AS/NZS 4507 RHE-1

## Current Ratings

Refer to AS/NZS 3008  
Single Core table 6,9 & 15  
Multi Core table 5,8,11 & 14

## Voltage Rating

0.6/1 kV

By reducing emissions of harmful gases that may hinder an evacuation process during fire, these cables have been designed with safety in mind whilst retaining excellent mechanical and electrical properties.

All our Envirolex® range has a self reported Declare label with the top Red List Free status. International Living Future Institute manages the Declare program to ensure we make a healthy product choice for sustainable building projects.



Halogen Free



Low Smoke



Max Operating Temp  
90°C/110°C  
Min Operating Temp  
-25°C



High Flexibility



Flame Retardant



Hospital



Emergency exits



Office building

# ENVIROLEX® FLAT TPS

Envirolex® flat TPS (with earth) is an enhanced performance cable designed for the building and construction industry for general power and lighting purposes with a higher fire performance capability.

These cables are also PVC Free and made with **low smoke zero halogen** materials that **reduce harmful gas** and smoke emissions that hinder a fire evacuation.

They are **flame retardant** and **non-propagating** to help reduce the spread of fire.



Note: 2, 3 and 4 cores in sizing 1.5mm<sup>2</sup> to 6mm<sup>2</sup>

**Construction**  
Cu Conductor  
X-90 insulation  
Green HFS-90-TP sheath  
(low smoke zero halogen)

**Operating Temp**  
Max 90°C  
Min -25°C

**Voltage Rating**  
450/750V

**Standards**  
AS/NZS 5000.2  
AS/NZS 4507 RHE-1



Halogen Free



Low Smoke



Max Operating Temp  
90°C  
Min Operating Temp  
-25°C



Flame Retardant



**Red List Free**

AN ASSOCIATION OF LIVING FUTURE INDUSTRIES



Public high traffic areas



Tunnel

FOR MORE INFORMATION ON CABLE FIRE RATING STANDARDS AND PRODUCT CODES, SEE PAGE 11.

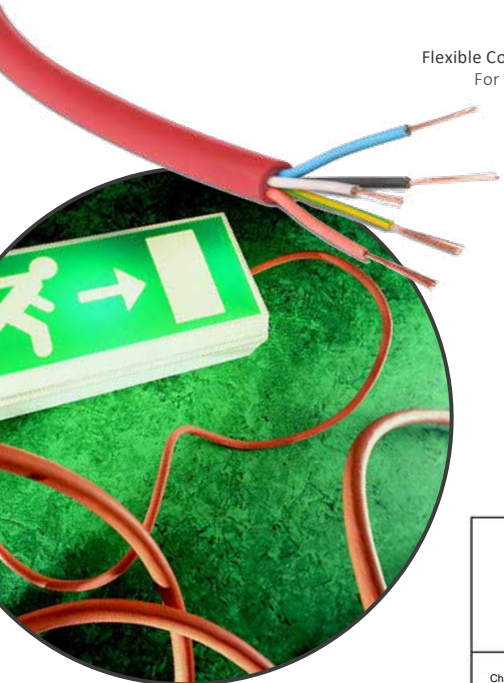
# ALSECURE®

Alsecure® Fire Rated cables are designed to preserve circuit integrity of essential services and electrical equipment during fire. Alsecure® has a MICA tape layer that acts as a protective barrier during fire.

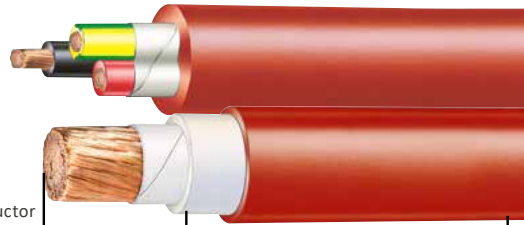
These cables meet the WS52W fire test in accordance with AS/NZS 3013 and have Red List Free Declare status by the International Living Future Institute and Envirospec verified, making them an environmentally friendly and healthy product choice for sustainable building projects.

Used for mains/sub mains power, lighting, alarms, pumps and other essential services for high traffic public places such as airports, shopping malls, hospitals and tunnels.

Featuring a flexible stranded copper conductor, Alsecure® is a **halogen free** cable made from **flame retardant** materials making it **low smoke, low toxic** and **free from corrosive emissions** with 110° C rated insulation and sheath.



Flexible Copper Conductor  
For ease of handling  
and installation



Low Smoke Zero Halogen Material  
Non-toxic emissions in the event  
of a fire and contributes to  
the green star rating of  
your project

MICA Tape  
A key layer that acts as  
a protective barrier during fire,  
maintaining circuit integrity



Halogen Free



Low Smoke



Max Operating Temp  
110°C  
Min Operating Temp  
-25°C



Chemical Resistance



Flame Retardant

WS	1st Numeral Electrical Performance		2nd Numeral Mechanical Performance		Supplementary letter
	Number	Level of circuit integrity in fire condition	Number	Level of protection against mechanical damage	Water spray test applied
Characteristic lettering "WS"	1	15 min	1	Light	The letter "W" shall be applied as appropriate
	2	30 min	2	Moderate	
	3	60 min	3	Heavy	
	4	90 min	4	Very Heavy	
	5	120 min	5	Extremely Heavy	



## Construction

Single and Multicore flexible  
Cu conductor (Class 5\*)  
Single and Multicore X-HF-110 insulated  
Single and Multicore HFS-110-TP sheathed to  
AS/NZS 5000.1  
WS52W Fire Rated to AS/NZS 3013  
(see table on page 8)

## Operating Temp

Suggested Max 110°C  
Min -25°C

## Voltage Rating

0.6/1 kV

## Current Ratings

Refer to AS/NZS 3008  
table 6,12 & 15

## Standards

AS/NZS 3013  
AS/NZS 5000.1  
AS/NZS 4507 RHE-1

\* Note 1.5mm<sup>2</sup> to 6mm<sup>2</sup> - class 2 conductor



Shopping centres



Emergency exits



Public high  
traffic areas



Office building



Tunnel



Red List  
Free

AN ENVIRONMENTAL LIVING  
FUTURE INSTITUTE



FOR MORE INFORMATION ON CABLE FIRE  
RATING STANDARDS AND  
PRODUCT CODES, SEE PAGE 11.

# PRODUCT CODES - ENVIROLEX®

Product Description	Product Code
CU ENVIRO RHE-1-FLEX 2X1.5+E OG	DTHR04HF002OMHF
CU ENVIRO RHE-1-FLEX 2X2.5+E OG	DTHR05HF002OMHF
CU ENVIRO RHE-1-FLEX 2X4+2.5E OG	DTHR06HF002OMHF
CU ENVIRO RHE-1-FLEX 2X6+2.5E OG	DTHR07HF002OMHF
CU ENVIRO RHE-1-FLEX 3X1.5+E OG	FTHR04HF003OMRJ
CU ENVIRO RHE-1-FLEX 3X2.5+E OG	FTHR05HF003OMRJ
CU ENVIRO RHE-1-FLEX 3X4+2.5E OG	FTHR06HF003OMRJ
CU ENVIRO RHE-1-FLEX 3X6+2.5E OG	FTHR07HF003OMRJ
CU ENVIRO RHE-1-FLEX 3X10+4E OG	FTHX01HF003OMRJ
CU ENVIRO RHE-1-FLEX 4X1.5+E OG	HTHR04HF004OMEM
CU ENVIRO RHE-1-FLEX 4X2.5+E OG	HTHR05HF004OMEM
CU ENVIRO RHE-1-FLEX 4X4+2.5E OG	HTHR06HF004OMEM
CU ENVIRO RHE-1-FLEX 4X6+2.5E OG	HTHR07HF004OMEM
CU ENVIRO RHE-1-FLEX 4X10+4E OG	HTHX01HF004OMEM
CU ENVIRO RHE-1-FLEX 4X16+6E OG	HTHX02HF004OMEM
CU ENVIRO RHE-1-FLEX 4X25+6E OG	HTHX03HF004OMEM
CU ENVIRO RHE-1-FLEX 4X35+10E OG	HTHX04HF004OMEM
CU ENVIRO RHE-1-FLEX 16 BK 110	BZHX02AA001CXNA
CU ENVIRO RHE-1-FLEX 16 GNYE 110	BZHX02AA001HTNA
CU ENVIRO RHE-1-FLEX 25 BK 110	BZHX03AA001CXNA
CU ENVIRO RHE-1-FLEX 25 GNYE 110	BZHX03AA001HTNA
CU ENVIRO RHE-1-FLEX 35 BK 110	BZHX04AA001CXNA
CU ENVIRO RHE-1-FLEX 35 GNYE 110	BZHX04AA001HTNA
CU ENVIRO RHE-1-FLEX 50 BK 110	BZHX05AA001CXNA
CU ENVIRO RHE-1-FLEX 50 GNYE 110	BZHX05AA001HTNA
CU ENVIRO RHE-1-FLEX 70 BK 110	BZHX06AA001CXNA
CU ENVIRO RHE-1-FLEX 70 GNYE 110	BZHX06AA001HTNA
CU ENVIRO RHE-1-FLEX 95 BK 110	BZHX07AA001CXNA
CU ENVIRO RHE-1-FLEX 95 GNYE 110	BZHX07AA001HTNA
CU ENVIRO RHE-1-FLEX 120 BK 110	BZHE87AA001CXNA
CU ENVIRO RHE-1-FLEX 120 GNYE 110	BZHE87AA001HTNA
CU ENVIRO RHE-1-FLEX 150 BK 110	BZHE88AA001CXNA
CU ENVIRO RHE-1-FLEX 185 BK 110	BZHE89AA001CXNA
CU ENVIRO RHE-1-FLEX 240 BK 110	BZHE90AA001CXNA
CU ENVIRO RHE-1-FLEX 300 BK 110	BZHE91AA001CXNA
CU ENVIRO RHE-1-FLEX 400 BK 110	BZHE92AA001CXNA
CU ENVIRO RHE-1-FLEX 500 BK 110	BZHE93AA001CXNA
CU ENVIRO RHE-1-FLEX 630 BK 110	BZHE94AA001CXNA



## ENVIROLEX® FLAT TPS

Product Description	Product Code
CU TPS RHE-1 2X 1.5+E ENVIRO LTGN 1HM	CTCP05J1002GGHF
CU TPS RHE-1 2X 1.5+E ENVIRO LTGN 5HM	CTCP05J5002GGHF
CU TPS RHE-1 2X 2.5+E ENVIRO LTGN 1HM	CTCP07J1002GGHF
CU TPS RHE-1 2X 2.5+E ENVIRO LTGN 5HM	CTCP07J5002GGHF
CU TPS RHE-1 2X 4+E ENVIRO LTGN 1HM	CTCP09J1002GGHF
CU TPS RHE-1 2X 4+E ENVIRO LTGN 5HM	CTCP09J5002GGHF
CU TPS RHE-1 2X 6+E ENVIRO LTGN 1HM	CTCP11J1002GGHF

For other Envirolex® designed cables outside of the codes listed above, please contact a Nexans Representative.

# PRODUCT CODES - ALSECURE®

Product Description	Product Code
CU ALSEC RHE-1 2X 2.5+E 110	PDGP07AA002JBAA
CU ALSEC RHE-1 4X 2.5+E 110	PDGP07AA004JBAA
CU ALSEC RHE-1 FLEX 4X10+E 110	PDGX01AA004JBAA
CU ALSEC RHE-1 FLEX 4X16+E 110	PDGX02AA004JBAA
CU ALSEC RHE-1 FLEX 4X25+E 110	PDGX03AA004JBAA
CU ALSEC RHE-1 FLEX 4X35+E 110	PDGX04AA004JBAA
CU ALSEC RHE-1 FLEX 4X50+16E 110	PDGX05AA004JBAA
CU ALSEC RHE-1 FLEX 1x 16 110	PFLX02AA001JBNA
CU ALSEC RHE-1 FLEX 1x 25 110	PFLX03AA001JBNA
CU ALSEC RHE-1 FLEX 1x 35 110	PFLX04AA001JBNA
CU ALSEC RHE-1 FLEX 1x 50 110	PFLX05AA001JBNA
CU ALSEC RHE-1 FLEX 1x 70 110	PFLX06AA001JBNA
CU ALSEC RHE-1 FLEX 1x 95 110	PFLX07AA001JBNA
CU ALSEC RHE-1 FLEX 1x120 110	PFLX08AA001JBNA
CU ALSEC RHE-1 FLEX 1x150 110	PFLX09AA001JBNA
CU ALSEC RHE-1 FLEX 1x185 110	PFLX10AA001JBNA
CU ALSEC RHE-1 FLEX 1x240 110	PFLX11AA001JBNA
CU ALSEC RHE-1 FLEX 1x300 110	PFLX12AA001JBNA
CU ALSEC RHE-1 FLEX 1x400 110	PFLX13AA001JBNA
CU ALSEC RHE-1 FLEX 1x500 110	PFLX14AA001JBNA
CU ALSEC RHE-1 FLEX 1x630 110	PFLX15AA001JBNA



Envirolex® and Alsecure® standards can be summarised by the following table:

Description	AS/NZS/IEC	Products
Gas and Smoke	AS/NZS 60754	Alsecure®/Envirolex®
Smoke Density	AS/NZS 61034	Alsecure®/Envirolex®
Flame retardant	AS/NZS 60332	Alsecure®/Envirolex®
Circuit integrity	AS/NZS 3013	Alsecure®

\*For more information on fire rating of cable testing, contact a Nexans representative.

## Local Expertise, global capabilities.

As New Zealand's largest power cable supplier, Nexans New Zealand manufactures a wide range of quality electrical cable with ratings up to 33kV, all of which are quality and environmentally certified to ISO9001 and ISO14001.

We have been manufacturing and distributing power cables from our New Plymouth facility since 1967 and are committed to providing our customers in New Zealand and the Pacific with superior products and leading expertise.

As part of the global Nexans group, we have access to an extensive range of world-leading cable products and solutions suitable for energy projects within all markets including energy, infrastructure, industry, building and construction.

Our team of experts are committed to our customers by providing technical consultancy, bespoke cable design, an IANZ accredited lab service and comprehensive logistics.

Call 0508 NEXANS or visit [www.nexans.co.nz](http://www.nexans.co.nz)



Our business **purpose** is to live our **core values** by ensuring our **products** offer **lasting benefit** to all our key stakeholders - **People, Partners, Products** and our **Planet**.

