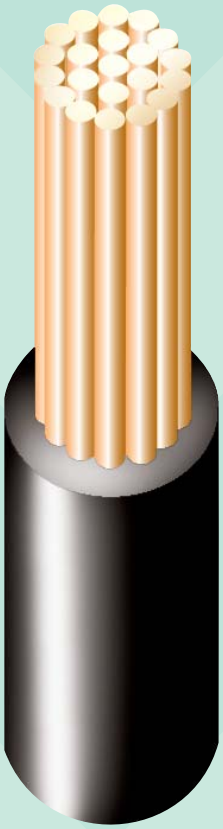
LSOH Wiring Cables

Low Voltage (450/750 V)

6491B Afumex

Afumex®

LSOH Conduit Wire (HO7Z-R)



Cable Approvals

Cable approved to BS7211

Key Applications

> Manufactured to BS EN 50525-3-41 90°C cross linked (previously BS 7211)

> Installation in surface mounted or embedded conduits, or similar closed systems and for fixed protected installation in or on lighting f ttings and inside appliances, switchgear and control gear particularly for situations in which low emissions of smoke and acid gas is requred in case of burning

> Green/Yellow for use as earth

Conductor

> Plain annealed copper stranded circular conductor complying with BS EN 60228 Class 2

Insulation

> 90°C LSOH insulation complying with BS EN 50363-5 Type El 5

Core Identification

- Red
- Black
- Blue
- Yellow
- Brown
- Grey
- Green/Yellow

Other core colours are available on request

QUALITY Afumex ASSURED

Temperature Range -25 to +90°C	Bending Radius Fixed r=6D	Mechanical Impact Medium	Fire Performance BS EN 60332-1-2	Flexibilty Rigid	Halogen free BS EN 50267-2-2	Low smoke emissions BS EN61034-2

Prysmian Cables & Systems Limited, Sales Off ce, Chickenhall Lane, Eastleigh, Hants, SO50 6YU, UK
Commercial Enquiries, Tel +44 (0) 8457 678 345, Fax: +44 (0) 23 8029 5465
www.prysmian.co.uk

Ref: 6491B/09/08

PRYSMIAN CABLES & SYSTEMS

LSOH Conduit Wire (HO7Z-R)

Cable Details

Nominal cross sectional area mm²	Conceptual construction no/mm	Approx. overall diameter mm	Approx. cable weight kg	Maximum conductor resistance at 20°C ohms/km	Short circuit rating 90-160°C (1 sec) kA	Short circuit rating 90-250°C (1 sec) kA	Current rating DC or single phase AC enclosed in conduit or trunking Amps	Current rating Three phase AC enclosed in conduit or trunking Amps	Voltage drop DC mV/A/m	Voltage drop DC or single phase AC mV/A/m	Voltage drop three phase AC mV/A/m
1.5	7/0.53	3	21	12.1	0.15	0.22	22	19	31	31	27
2.5	7/0.67	3.6	32	7.41	0.25	0.36	30	26	19	19	16
4	7/0.85	4.2	47	4.61	0.4	0.6	40	35	12	12	10
6	7/1.04	4.7	66	3.08	0.6	0.9	51	45	7.3	7.9	6.8
10	7/1.35	6.1	114	1.83	1	1.4	71	63	4.7	4.7	4
16	7/1.70	7.2	171	1.15	1.6	2.3	95	85	2.9	2.9	2.5
25	7/2.14	8.4	250	0.727	2.5	3.6	126	111	1.85	1.9	1.65
35	comp.*	9.5	350	0.524	3.5	5	156	138	1.35	1.35	1.15
50	comp.*	11.3	470	0.387	5	7.2	189	168	0.99	1.05	0.9
70	comp.*	12.6	670	0.268	7	10	240	214	0.68	0.75	0.65
95	comp.*	14.7	930	0.193	9.5	13.6	290	259	0.49	0.58	0.5
120	comp.*	16.2	1160	0.153	12	17.2	336	299	0.39	0.48	0.42
150	comp.*	18.1	1430	0.124	15	21.5	375	328	0.32	0.43	0.37
185	comp.*	20.2	1790	0.0991	18.5	26.5	426	370	0.25	0.37	0.32
240	comp.*	22.9	2350	0.0754	24	34.3	500	433	0.19	0.33	0.29
300	comp.*	27	3030	0.0601	30	42.9	573	493	0.155	0.31	0.27
400	comp.*	32	4010	0.047	40	57.2	683	584	0.12	0.29	0.25
500	comp.*	35.5	5020	0.0366	50	71.6	783	666	0.093	0.28	0.24
630	comp.*	39.5	6440	0.0283	63	90.2	900	764	0.072	0.27	0.23

* Compressed stranded conducts

Temperature Rating Factors

Ambient Temperature °C	25	30	35	40	45	50	55	60
Rating Factor	1.02	1.00	0.96	0.91	0.87	0.82	0.76	0.71

Correction factors for Groupings

Number of circuits	2	3	4	5	6	7	8	9
Rating Factor	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50

Ref: 6491B/09/08

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PRYSMIAN GUIDE TO CHANGES OF BRITISH STANDARD NUMBERS EN 50525, BS 6004 AND BS 7211



At the end of 2012 a number of changes to British Standards will come into effect.

1. Some existing British Standards feauturing HAR products will be withdrawn on 31st December 2012.

2. BS EN 50525 for wiring and flexible cables up to and including 450/750 V was published in September 2011 and will become fully effective from 1st January 2013 and replaces a number of existing British Standards being withdrawn on 31st December 2012.

3. There will be changes to existing standards BS 6004 and BS 7211 which were re issued in September 2012.

None of these amendments require changes to Prysmian manufacturing and market practice.

WHAT ARE THE KEY CHANGES?

1. The following British Standards will be withdrawn on 31st December 2012

BS 638-4	Arc welding power sources, equipment and accessories. Specification for welding cables
BS 6007	Electric cables – Single core unsheathed heat-resisting cables for voltages up to and including 450/750 V, for internal wiring
BS 6500	Electric cables – Flexible cords rated up to 300/500 V, for use with appliances and equipment intended for domestic, office and similar environments
BS 7919	Electric cables – Flexible cables rated up to 450/750 V, for use with appliances and equipment intended for industrial and similar environments

2. The introduction of BS EN 50525

In 2011 a new European Standard, EN 50525, covering wiring and flexible cables up to and including 450/750 V was issued and it supersedes the earlier harmonisation documents HD21 and HD22. Previously national standard bodies, such as the BSI, had freedom to issue their own national technically equivalent standards. Now, the new EN format must be implemented unchanged. The British Standards Institute therefore published all 18 parts of BS EN 50525.

One impact of this will be that 6491X and 6491B currently manufactured and tested to BS 6004 and BS 7211 are now excluded from those British Standards and are now be covered by EN 50525.

6491X:	Previously BS 6004	Now manufactured to BS EN 50525-2-31:2011
6491B:	Previously BS 7211	Now manufactured to BS EN 50525-3-41:2011. 90 °C cross linked

A number of cables with UK CMA codes and harmonised references will now be covered by the BS as shown in the table below

2.a Table of existing standards, harmonised codes and new Standard numbers		
UK cable codes	**HAR codes**	**New cable standard**
2491X	H05V U	BS EN 50525-2-31
2491X	H05V K	BS EN 50525-2-31
6491X	H07VU	BS EN 50525-2-31
6491X	H07VR	BS EN 50525-2-31
6491X	H07VK	BS EN 50525-2-31
218-Y	H03VV F	BS EN 50525-2-11
2192Y	H03VVH2 F	BS EN 50525-2-11
318-Y	H05VVF	BS EN 50525-2-11
3192Y	H05VVH2 F	BS EN 50525-2-11
2491B	H05Z U	BS EN 50525-3-41
2491B	H05Z K	BS EN 50525-3-41
6491B	H07Z U	BS EN 50525-3-41
6491B	H07Z R	BS EN 50525-3-41
6491B	H07Z K	BS EN 50525-3-41
218-B	H03Z1Z1 F	BS EN 50525-3-11
2192B	H03Z1Z1H2 F	BS EN 50525-3-11
318-B	H05Z1Z1 F	BS EN 50525-3-11
3192B	H05Z1Z1 H2 F	BS EN 50525-3-11

U = SOLID CONDUCTOR, R = RIGID STRANDED CONDUCTOR, K = FLEXIBLE CONDUCTOR FOR FIXED INSTALLTIONS, F = FLEXIBLE CONDUCTOR FOR FLEXIBLE APPLICATIONS

Changes to Flexible cords.

BS 6500 and BS 7919 have now been replaced by the BS EN 50525 as detailed in the box below. It should be noted that in BS EN 50525-1 section 7.4 and annex A it describes tests and requirements to be met for the mechanical strength of flexible cables. These are new tests and you need to ensure your cable supplier can meet these. Where cables are required to be "halogen free", the standard now clearly shows a procedure for assessment in BS EN 50525-1, 7.5 B. Again you should make sure your cable supplier complies with these requirements.

Flexible cords	Previously BS 6500 & BS 7919	Now manufactured to BS EN 50525-2-11. PVC Flex
		Now manufactured to BS EN 50525-2-21. Rubber flex
		Now manufactured to BS EN 50525-3-11. LSOH Flex TP 70 °C
		Now manufactured to BS EN 50525-3-21. LSOH Flex XL 90 °C
		NB: BS EN 50525-1 para 7.4 and annex A have new requirements for mechanical strength of flex

3. Changes to BS 6004 and BS 7211

BS 6004 and BS 7211 were reissued in September 2012. 6491X and 6491B have now been removed from these standards and appear in BS EN 50525. BS 6004 and BS 7211 now cover only selected UK cables designs and will now include Arctic Flexible cords. The detail are in the table below:

BS 6004	Now covers:	6181Y, 6192Y, 6241Y, 6242Y, 6243Y, 3192A, 318-A (arctic flex).
BS 7211	Now covers:	6181B, 6242B etc

Changes to cable marking.

In recent years the Approved Cables Initiative (ACI) has highlighted that the absence of marking, or the inadequacies of incomplete or erroneous marking are a major safety hazard. The BSI and major stakeholders such as BASEC and the BCA have worked together to promote improvements to British Standards to ensure marking requirements are clear. The new BS 7211 and BS 6004 will feature the following mandatory elements of marking:

Element	Explanation
Cable manufacturer	This should be the original manufacturer's name and their unique factory identifier. Where the manufacturer has a recognised trademark or equivalent, this may be added, but may not replace the requirement for name and factory identifier.
Electric cable	The marking "ELECTRIC CABLE" is a well established safety item, and is retained.
Voltage designation	Some standards have cables of only a single voltage rating, say 300/500 V. Others may contain cables of more than one voltage rating. The marked rating must correspond to that of the actual cable in question.
British Standard number	By marking the standard number, for instance "BS 6004", the manufacturer is making a declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is solely the claimant's responsibility. Such a declaration is not to be confused with third-party certification of conformity.
UK cable code	The various codes, such as 6242Y, are easily recognised by installers and other professionals, providing an invaluable instant recognition of the cable type. The concept is now widely used in European cable standards
Number of cores and nominal area of conductor	This augments the code by showing precisely the make-up of the cable and especially conductor cross-sectional area in millimetres. This is crucial to safety calculations relating to current ratings and voltage drops. A typical marking may be "3 x 1.5"
	Where a cable has an insulated circuit protective conductor (CPC) it is required also to add for instance "+ 1.0" indicating in such a case that the CPC has a 1 mm^2 conductor size.
Year of manufacture	The year of manufacture may take the form of the actual year (e.g. 2013) or a coded year identifier assigned by the manufacturer. This acts as a significant aid to traceability in the case of a problem
Standard core colour identifier	Following European harmonisation of core colours, and to allow the British Standards to continue to be used in non-European countries that use UK wiring practices, it became essential to provide an external marking to indicate use of the harmonised colours. That marking is the letter "H"

Because all of the above elements of marking constitute safety aspects of the correct installation and use of the cable, it is essential that the markings be permanent and durable to recognise that the useful lifetime of the cable may be measured in decades. In these four standards such markings are to be applied by embossing or indenting. Certain additional information, such as for instance metre or length marks, may be applied alternatively by printing techniques.

Whilst it is not mandatory to have these cables approved by a 3rd party body (in the UK such as BASEC) many manufacturers recognise the benefits of doing so. Where the manufacturer wishes to declare such approval, it shall be in accordance with the marking requirements of the Approval Body. These standards specify the method of such marking.

Key dates in the changeover

30th September 2011 - BS EN 50525 (18 parts) published by BSI. From this date manufacturers may choose to declare conformity to this standard in place of the pre-existing British Standards, but it is not mandatory.

September 2012 - Publication of new editions of BS 6004 and BS 7211.

31st December 2012 - Withdrawal of BS 638-4, BS 6007, BS 6500 and BS 7919.

1st January 2013 - BS EN 50525 (18 parts) comes into effect fully, plus the new editions of BS 6004 and BS 7211.

Prysmian & The changeover

Prysmian will fully implement the required changes in line with the 1st January 2013 target dates. Any stock made prior to this date is fully BASEC approved and can be used and sold in the market place.

There is a transition period advised by BASEC which extends to the end of 2013, wherein BASEC will continue to offer HAR certification to the British Standards/HDs until this deadline when certificates will be cancelled. All new BASEC approvals required by Prysmian cables have been applied for and will be in place for this deadline.
There are no changes to cables currently supplied by Prysmian but there are some changes covering new tests for flexible cables and you should check your supplier now complies with these.

As our customer you can continue to supply cables already in your possession from ourselves and also cable that may be delivered to you in 2013, where the cables may still be marked 2012. These are perfectly fine to sell as the new regulations effect manufacturing not supply. In effect, all you need do is to continue to order your cable exactly as you have in the past from us and we Prysmian, will supply cable correctly marked and approved for sale in the market place.

PRYSMIAN

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Prysmian Group

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Should you have any concerns about unsafe, non-approved or counterfeit cable please contact the ACI

Tel: +44 (0) 20 8946 6978
Email: report@aci.org.uk

member of the ACI approved cables initiative

Pirelli Cables Limited
Energy Cables

5 January 2004

BBC Cable Engineering Co Ltd
C/oE engineering (HK) Ltd
Unit 304B-306A, Island Place Tower
510 Kings Road
Hong Kong
Attention: Mr Benny Mok

Dear Sirs

KCRC East Rail Extensions
Contract LCC300 – Lok Ma Chau Terminus & Associated Works
Electrical Installation – Engineers's comments to single core cables

Thank you for Mott Connell's Engineer's Response Form No LCC300/ERF/NA/11105/B/BEM which has been passed to us for an answer.

When BS7211 was first issued it was based on BS6004 for all tests except the Low Smoke requirements. Therefore the voltage rating of this cable is suitable for 600/1000V when enclosed in conduit, ducting etc.

Prior to European Harmonization in 1975 BS6004 was rated at 600/1000V. When this cable was harmonized, no change was made to this cable other than its' voltage designation. The insulation was unchanged, the grade of insulation material was unchanged and the voltage tests were unchanged. Therefore the cables were identical.

There were issues in Europe in agreeing what the voltage designation should be, since every country had a different voltage system and wiring practice. Therefore the ultimate voltage designation agreed was a political/committee decision rather than a technical decision.

The only comment on 600/1000V that remains in the present British Standard (BS6004:1995) for this cable is in the annex on guide to use where it states:-

> 'Suitable for use in channels with cover. Suitable for fixed protected installation in or on lighting fittings and inside appliances, switchgear and control gear, for voltages up to 1000V a.c. or up to 750V to earth d.c.

We trust this clarifies the situation.

Yours faithfully

Derek Brace
Export Manager

Certificate No:
017/003/213

Issue No: 9

Certificate of Product Approval

Licensee:
Prysmian Cables & Systems Ltd

Chickenhall Lane, Eastleigh, SO50 6YU, Hampshire, United Kingdom

Factory:
Harriet Street

Trecynon, Aberdare, CF44 0TD, Glamorgan, United Kingdom

Standard:
BS EN 50525-3-41:2011

Description:
Single core non-sheathed cables with LSHF crosslinked insulation

Details:
N/A

Materials:
Insulation EI 5, Sheath N/A

Brand Name:
N/A

Origin Mark:
BRITCABLE (A) or PRYSMIAN (A)

Permissible Approval Marks:

BASEC name | BASEC roundel

Signed for and on behalf of BASEC Group Limited

Date: 07/08/2026

Date of original issue: 30/11/2012
Check BASEC website to verify validity.

BASEC Group Limited, Presley House, Presley Way, Milton Keynes, MK8 0ES, UK
Registered in England No. 13950143, Tel: +44 (0)1908 267300
Email: mail@basec.org.uk Web: www.basec.org.uk

UKAS PRODUCT CERTIFICATION 0004

Expiry date:
11/08/2029

Certificate No:
017/003/213

Issue No: 9

Type(s) and Range(s) of Approval

Table / Clause	Code Designation	Conductor Class	Range of Cores	Min Nominal Size -sqmm	Max Nominal Size - sqmm
4.1	H07Z-U	Class 1	1	1.5	10
4.1	H07Z-R	Class 2	1	1.5	25

Signed for and on behalf of BASEC Group Limited

Date: 07/08/2026

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UKAS PRODUCT CERTIFICATION 0004

Expiry date:
11/08/2029

BASEC
a kiwa company

Certificate No:
017/004/317

Issue No: 9

Certificate of Product Approval

Licensee:
Prysmian Cables & Systems Ltd
Chickenhall Lane, Eastleigh, SO50 6YU, Hampshire, United Kingdom

Factory:
Chickenhall Lane, Eastleigh, SO50 6YU, Hampshire, United Kingdom

Test Report No:
F4TTA130

National Standard:
BS EN 50525-3-41:2011

European Standard:
EN 50525-3-41:2011

Type Description:
Single core non-sheathed cables with LSHF crosslinked insulation

Details:
N/A

Materials:
Insulation EI 5, Sheath N/A

Brand Name:
N/A

Origin Mark:
PRYSMIAN (B) or (B) PRYSMIAN or BRITCABLE (B) or (B) BRITCABLE

PERMISSIBLE MARKS

BASEC ◁ HAR ▷

BLACK - 1cm
RED - 1cm
YELLOW - 3cm
THREAD

Note: The black - red - yellow thread has been registered in this country as an identification thread in the BSI "Register of colours of manufacturers' threads for electric cables and cords" for Verband Deutscher Elektrotechniker (VDE) e.V., Frankfurt, Germany. VDE has authorized BASEC to use this thread.

Please refer to the BASEC Product Certification Requirements

Signed for and on behalf of BASEC Group Limited

Date: 06/08/2026

Date of original issue: 04/11/2013

Check BASEC website to verify validity.

Superseded Certification No: 017/004/290

UKAS PRODUCT CERTIFICATION 0004

Expiry date:
11/08/2029

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BASEC
a kiwa company

Certificate No:
017/004/317

Issue No: 9

Type(s) and Range(s) of Approval

Table	Code Designation	Conductor Class	Range of Cores	Min Nominal Size	Max Nominal Size
4.1	H07Z-R	Class 2	1	1.5	630

This certificate is issued according to the rules of the HAR agreement. The certification Scheme meets the criteria for type 5 Scheme laid down in the ISO/IEC 17067:2013 (Type Testing, Factory Inspection with assurance of conformity by continuous sample testing, production surveillance and market surveillance). The certificate issued by any Certification Body adhering to the HAR Agreement has the same worth and validity in all the other Certification Bodies' countries.

Compliance with the requirements of the above listed Harmonised Standards carries a presumption of conformity with the essential safety requirements of Directive 2014/35/EU (Low Voltage Directive).

Signed for and on behalf of BASEC Group Limited

Date: 06/08/2026

Date of original issue: 04/11/2013

Check BASEC website to verify validity.

Superseded Certification No: 017/004/290

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Expiry date:
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