Warringtonfire
Holmesfield Road
Warrington
WA1 2DS

T: +44 (0)1925 655 116
info.warrington@warringtonfire.com
warringtonfire.com

Title:

The Fire Resistance Performance Of Timber Or Mineral Composite Based Insulated Doorsets When Fitted With 'HOPPE' and 'ARRONE' Pull Handles

Report No:

WF No. 347094 Issue 2

Prepared for:

HOPPE (UK) Limited

Gailey Park, Gravelly Way
Standeford
Wolverhampton
WV10 7GW

Date:

4th December 2014

Warringtonfire Testing and Certification Limited
Registered in England and Wales
Registered Office: 10 Lower Grosvenor Place, London, United Kingdom, SW1W 0EN
Company Registration No: 11371436

TABLE OF CONTENTS

Foreword

This assessment report has been commissioned by HOPPE (UK) Limited and relates to the fire resistance of door handles.

This assessment is for National Application and has been written in accordance with the general principles outlined in BS EN 15725: 2010; Extended application reports on the fire performance of construction products and building elements, as appropriate.

This assessment uses established empirical methods of extrapolation and experience of fire testing similar products, in order to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with EN1634 or BS 476-22.

This assessment has been written using appropriate test evidence generated at a UKAS accredited laboratory to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturer's products and is summarised within the assessment.

The defined scope presented in this assessment report relates to the behaviour of the proposed door handles under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the handles in use.

This assessment has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the Guide to undertaking technical assessments of the fire performance of the fire performance of construction products based on fire test evidence – 2019. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used in lieu of fire tests for building control and other purposes.

The PFPF guidelines are produced in association with the major fire testing, certification bodies and trade associations in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

This report is not intended for use in support of EN 15269-2 and EN 15269-3 (Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware.), or CE Marking of Doorset to EN 16034 (Pedestrian doorsets, industrial, commercial, garage doors and openable windows. Product standard, performance characteristics. Fire resisting and/or smoke control characteristics).

Executive Summary

Objective

This report presents an appraisal of the fire resistance performance of timber or mineral composite based doorsets when fitted with 'HOPPE' and 'ARRONE' pull handles, if tested in accordance with BS EN 1634-1.

Report Sponsor

HOPPE (UK) Limited

Address

Gailey Park, Gravelly Way
Standeford
Wolverhampton
WV10 7GW

Summary of Conclusions

Timber or mineral composite based doorsets that have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire) which have achieved up to 60 minutes integrity as discussed in this report, may be fitted with 'HOPPE' and 'ARRONE' pull handles, without detracting from the overall performance of the doorset.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1, on the basis of the evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

Valid until

31st July 2025

Introduction

This report presents an appraisal of the fire resistance performance of single-acting insulated (timber or mineral composite) doorsets when fitted with 'HOPPE' and 'ARRONE' pull handles. The doorset, onto which the proposed hardware is to be fitted, may be of single-leaf or double-leaf configuration.

The proposed doorsets will be constructed of timber or mineral composite and are required to provide a fire resistance performance of up to 60 minutes integrity with respect to BS EN 1634-1.

FTSG

The data referred to in the supporting data section has been considered for the purpose of this appraisal which has been prepared in accordance with the Fire Test Study Group Resolution No. 82: 2001.

Assumptions

It is assumed that the 'HOPPE' and 'ARRONE' pull handles will be fitted to a doorset which has also been previously shown to be capable of providing the required fire resistance performance when tested in accordance with BS EN 1634-1 in the proposed configuration i.e. single-leaf or double-leaf.

Supporting wall

It is also assumed that the construction of the wall, which supports the proposed doorsets, will have been the subject of a separate test and the performance of the wall is such that it will not influence the performance of the doorset for the required period.

Clearance gaps

Door leaf to frame clearance gaps can have a significant effect on the overall fire performance of a doorset. It is therefore assumed that the leaf to leaf and leaf to frame clearance gaps will not exceed those measured for the relevant fire tested doorset. In addition, it is assumed that the door leaves will be in the closed position.

Doorset Details

The lever furniture will always be used in combination with a lock/latch and it is therefore assumed that the tested doorset will have been tested or assessed when incorporating a latch/lock.

The spindle hole should be as small as possible, allowing for the operation of the handle, but shall be a maximum 16 mm in diameter.

Lock Installation

This appraisal does not consider the implications of installing a specific lock, within a specific timber fire door construction and only considers the influence of the lever handle furniture, the suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence. Including an additional intumescent protection included either side of the lock case.

For timber/mineral-based doorsets intumescent protection shall be included either side of the lockcase, and this shall be that tested with the mortice locks/doors to which the handles are to be fitted.

The locks/latches shall not be fitted higher than 1100 mm from the centre of spindle to the finished floor level of the surrounding floors.

Proposals

It is proposed that 'HOPPE' and 'ARRONE' pull handles may be fitted onto a previously tested (in accordance with BS EN 1634-1) insulated timber or mineral composite based doorset which has been shown to be capable of providing up to 60 minutes integrity in the same configuration as that proposed i.e. single-leaf or double-leaf.

The range of handles considered by this report comprises aluminium based, stainless steel based, Nylon based and composite Nylon/steel based handles of various designs and includes bolt through, back to back, concealed fixing and surface fixed mounting options.

Basic Test Evidence

WF No. 345070

The test referenced WF No. 345070 included two single-acting, single-leaf timber based doorsets, one of a 30 minute fire resisting design and the other of a 60 minute fire resisting design. The doorsets were each fitted with various items of hardware including pull handle sets.

Both doorsets were fitted with pull handles detailed as follows:

- AR3616/300BF-SSS with AR324A-SSS stainless steel push plate
- AR203/H/300BF-SAA with AR224C-SAA aluminium push plate
- AR3616/150BB-SSS
- AR204/H/150BB-SAA

The doorsets achieved 34 and 56 minutes integrity performances, for the 30 and 60 minute doorsets respectively. The test was discontinued after 65 minutes.

Test report review

The original test reports used in support of this assessment have been reviewed and it has been concluded that the test data remains acceptable and the final result would be unchanged on the following basis:

- A comparison of the test procedures and performance criteria with the current standard has identified that any variations would have no detrimental impact on the performance of the doorset and hardware under test
- The client has confirmed that there has been no change to the design or material specification of the hardware tested originally, consequently.
- The reports are available in their entirety, the products are adequately referenced and linked to the products being considered for assessment, and the ownership of the test data has been confirmed as the assessment report holder.

Assessed Performance

General

It is proposed that previously fire tested (or assessed by Warringtonfire) timber or mineral composite based insulated doorset may be fitted with 'HOPPE' and 'ARRONE' pull handles in order to provide up to 60 minutes integrity, without detracting from the performance of the doorset.

Aluminium and stainless steel handle models

The handles included in the test are considered to be representative of the majority of the ranges of handles included in this appraisal and were chosen in terms of material and fixing methods. All aluminium and stainless steel pull handles are hollow tube in diameters ranging from 19 to 22 mm and available in a range of sizes including 150 mm, 225 mm, 300 mm, 425 mm and 600 mm.

All of the HOPPE and ARRONE aluminium and stainless steel pull handles using the back to back or bolt through fixing methods require two holes to be drilled through the thickness of the door leaf to allow M8 fixing bolts to either secure or connect the handles.

Review of the test report cited in support of the proposal shows that, in the case of both 30 and 60 minute doorsets, the two material types and fixing methods did not detract from the performances of the doorset for the required periods. The 30 minute doorset achieved an integrity performance of 34 minutes and not instance of integrity failure associated with any of the pull handle assemblies fitted to that doorset occurred in the total test duration of 43 minutes at which point the doorset was sealed off.

Although the 60 minute doorset suffered from a premature failure after 56 minutes, this was not as a consequence of the installation of any of the pull handles fitted. Further examination of the observations taken during the test confirms that no instance of integrity failure associated with the pull handle assemblies fitted to the doorset occurred during the test duration of 65 minutes.

Based on the performances of the various handle models included in the test, the bolt through and back to back fixing methods are deemed to have satisfactorily demonstrated that they do not detract from the required performance of timber based doorsets for 30 and 60 minute fire resistance performances.

Concealed fix option

The concealed fixing option is essentially the same method as bolt through using two M8 bolts, but includes the addition of a rose at the base of the pull handle. This minor difference is not considered to have any negative influence on the likely performance of those models using the concealed fixing method; therefore their performance can be confidently assessed as equal to that of the tested bolt through models.

Plate mounted handles

A further option is for pull handles mounted on plates in 150 mm, 225 mm or 300 mm high versions. For these models the handle is not through bolted to the door leaf; instead the mounting plate is surface fixed via wood screws.

In this case the handle assembly is a wholly surface mounted item and considered to be less onerous than the tested models. The positive assessment of the plate mounted pull handles can therefore be positively appraised for the proposed applications.

Nylon pull handles

The 'HOPPE' Nylon pull handles considered by this report comprise a range of steel cored, Nylon coated or solid Nylon handles. They vary in fixing centres from 150 mm to 300 mm (solid Nylon), with the largest two sizes being 425 mm and 600 mm (steel cored).

The pull handles come in three fixing option; concealed fix, bolt fix or back to back. All fixing methods require a mounting bolt to pass through the thickness of the door leaf to secure the handle or connect it to the opposite handle.

The securing bolts used are relatively small in diameter at 8-10 mm and by themselves are unlikely to cause a significant thermal path through the door leaf which could result in a localised integrity failure. All sizes below 425 mm are a solid Nylon construction and so would burn and fall away from the exposed side of the door leaf during the first few minutes of exposure to the heating conditions of the test leaving only the fixing bolt in place.

For the two larger sizes, the Nylon material would again burn away, but this would expose the steel core. Whilst the exposure of the steel core could be considered as a path to the transfer heat into the door leaf, thereby causing local erosion of the timber material around the through fixing bolt, the direct evidence provided by the stainless steel handles included in the test referenced WF No. 345070 has demonstrated that the same fixing methods, have been utilised successfully on both 30 and 60 minute doorset constructions.

The HOPPE Nylon pull handles may therefore be positively appraised.

Based on the preceding discussion, the ARRONE and HOPPE ranges of pull handles listed within Annex A are deemed acceptable.

Proposed Doorsets

As stated in this report, the doorset, in the required configuration, will be previously tested (or assessed by Warringtonfire) and its performance is therefore not in doubt.

To enable the use of the hardware on a range of doorsets, it is necessary to address the available information on the proposed doorset. As this appraisal is intended to be used on a general basis and not restricted to any particular manufacturer of fire resisting doorsets, the following points are given to enable the hardware to be used safely:

a) The doorset shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 60 minutes integrity when tested by a UKAS approved laboratory (or assessed by Warringtonfire) to BS EN 1634-1.

b) Bolt through pull handles shall always be fitted in conjunction with the associated push plate fitted to the opposite face of the door leaf.

c) If the proposed doorset is to be used in double-leaf configuration the test or assessment evidence should be applicable to double-leaf configurations.

d) Intumescent protection shall be included either side of the lockcase, and this shall be that tested with the mortice locks/doors to which the handles are to be fitted.

Conclusions

Doorsets that have previously been successfully fire tested by a UKAS accredited laboratory (or assessed by Warringtonfire) which have achieved up to 60 minutes integrity, as discussed in this report, may be fitted with 'HOPPE' or 'ARRONE' pull handles without detracting from the overall performance of the doorset.

Review

It has been confirmed by Hoppe (UK) Limited that there have been no changes to the specification, materials or manufacturing location of the door handles considered in the original appraisal referenced WF Assessment Report No. 347094 issued 4th December 2014.

The original assessment has been written using appropriate test evidence generated at accredited test laboratories. The supporting test evidence has been deemed appropriate to support the manufacturers stated design.

The defined scope presented in the original assessment report relates to the behaviour of the proposed design under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the Door Handles in use.

This revalidation has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the PFPF guidelines to undertaking assessments in lieu of fire tests. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used in lieu of fire tests for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

The data used for the original appraisal has been re-examined and found to be satisfactory. The procedures adopted for the original assessment have also been re-examined and are similar to those currently in use.

Therefore, with respect to the assessment of performance given in WF Assessment Report No. 347094, the contents should remain valid for a further 5 years.

This review is based on information used to formulate the original assessment. No other information or data has been provided by Hoppe UK Ltd which could affect this review.

The original appraisal report was performed in accordance with the principles of the UK Fire Test Study Group Resolution 82: 2001. This review has therefore also been conducted using the principles of Resolution 82: 2001.

Validity

This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to Warringtonfire the assessment will be unconditionally withdrawn and Hoppe (UK) Limited will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested because actual test data is deemed to take precedence over an expressed opinion. The assessment is valid initially for a period of five years i.e. until 31st July 2025, after which time it is recommended that it be returned for re-appraisal.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1, on the basis of the evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

The appraisal is only valid provided that no other modifications are made to the tested construction other than those described in this report.

Summary of Primary Supporting Data

WF No. 345070

Test report relating to the performance of two fully insulated, single-acting, single-leaf, timber doorsets incorporating various items of building hardware, when subjected to a test in accordance with BS EN 1634-1: 2014 to determine their fire resistance performance.

For the purpose of the test the doorsets were referenced Doorset A and Doorset B.

Doorset A had overall nominal dimensions 2085 mm high by 1003 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 932 mm wide by 44 mm thick. The door leaf was of a solid graduated density chipboard construction, with 8 mm hardwood lippings to the vertical edges and was hung within a softwood frame on three stainless steel hinges. Doorset B had overall nominal dimensions 2085 mm high by 1009 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 932 mm wide by 54 mm thick. The door leaf was of a solid graduated density chipboard construction, with 8 mm hardwood lippings to the vertical edges and was hung within a hardwood frame on three stainless steel hinges.

Both doorsets incorporated a surface mounted overhead closer, two bolt-through pull handles on the exposed face, referenced AR3616/300BF-SS and AR203/H/300BF-SSA with corresponding push plates on the unexposed face referenced AR324A-SSS and AR224C-SSA, two additional back to back pull handles referenced AR3616/150BB-SSA and AR204/H/150BB-SSA were also fitted to the leaf.

The doorsets were installed such that they opened towards the heating conditions of the test.

The specimens satisfied the test requirements for the following periods:

Test Results:		**Doorset A**	**Doorset B**
Integrity performance	Sustained flaming	43 minutes	56 minutes
	Gap gauge	40 minutes	65 minutes*
	Cotton Pad	34 minutes	56 minutes
Insulation performance	Insulation	34 minutes	56 minutes

*The test duration. The test was discontinued after a period of 65 minutes.

Test date : 29th September 2014

Test sponsor : HOPPE (UK) Limited

Declaration by HOPPE (UK) Limited

We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 82: 2001.

We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which the assessment is being made.

We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.

We are not aware of any information that could adversely affect the conclusions of this assessment.

If we subsequently become aware of any such information we agree to cease using the assessment and ask Warringtonfire to withdraw the assessment.

Signed:

For and on behalf of:

Signatories

Responsible Officer (Issue 2)

R Anning* - Principal Certification Engineer

Approved (Issue 2)

A. Kearns* - Technical Manager

* For and on behalf of Warringtonfire.

Report Issued: 4th December 2014	Issue 2: Review/revalidation, general update of content/format and mitred pull handles added (30th July 2020)

The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.

Annex A – Permitted Hardware

Aluminium Pull Handles		
Reference	**Fixing type**	**Description**
AR204/150BB	Back-to-Back Fix Pull Handle	19mm & 20mm Diameter, 150mm Centres, SAA & GAA Finishes
AR204/225BB	Back-to-Back Fix Pull Handle	19mm & 20mm Diameter, 225mm Centres, SAA & GAA Finishes
AR204/300BB	Back-to-Back Fix Pull Handle	19mm & 20mm Diameter, 300mm Centres, SAA & GAA Finishes
AR204/425BB	Back-to-Back Fix Pull Handle	19mm & 20mm Diameter, 425mm Centres, SAA & GAA Finishes
AR204/600BB	Back-to-Back Fix Pull Handle	19mm & 20mm Diameter, 600mm Centres, SAA & GAA Finishes
AR224/300BB	Back-to-Back Fix Pull Handle	22mm Diameter, 300mm Centres, SAA Finish
AR224/425BB	Back-to-Back Fix Pull Handle	22mm Diameter, 425mm Centres, SAA Finish
AR203/150BF	Bolt Through Fix Pull Handle	19mm & 20mm Diameter, 150mm Centres, SAA & GAA Finishes
AR203/225BF	Bolt Through Fix Pull Handle	19mm & 20mm Diameter, 225mm Centres, SAA & GAA Finishes
AR203/300BF	Bolt Through Fix Pull Handle	19mm & 20mm Diameter, 300mm Centres, SAA & GAA Finishes
AR203/425BF	Bolt Through Fix Pull Handle	19mm & 20mm Diameter, 425mm Centres, SAA & GAA Finishes
AR203/600BF	Bolt Through Fix Pull Handle	19mm & 20mm Diameter, 600mm Centres, SAA & GAA Finishes
AR223/300BF	Bolt Through Fix Pull Handle	22mm Diameter, 300mm Centres, SAA Finish
AR223/425BF	Bolt Through Fix Pull Handle	22mm Diameter, 425mm Centres, SAA Finish
AR202/150CF	Concealed Fix Pull Handle	19mm & 20mm Diameter, 150mm Centres, SAA & GAA Finishes
AR202/225CF	Concealed Fix Pull Handle	19mm & 20mm Diameter, 225mm Centres, SAA & GAA Finishes
AR202/300CF	Concealed Fix Pull Handle	19mm & 20mm Diameter, 300mm Centres, SAA & GAA Finishes
AR202/425CF	Concealed Fix Pull Handle	19mm & 20mm Diameter, 425mm Centres, SAA & GAA Finishes
AR202/600CF	Concealed Fix Pull Handle	19mm & 20mm Diameter, 600mm Centres, SAA & GAA Finishes
AR222/300CF	Concealed Fix Pull Handle	22mm Diameter, 300mm Centres, SAA Finish
AR222/425CF	Concealed Fix Pull Handle	22mm Diameter, 425mm Centres, SAA Finish
AR2023/150CF/BF	150mm C.Fix/B.Fix Pull Handle	19mm & 20mm Diameter, 150mm Centres, SAA & GAA Finishes
AR2023/225CF/BF	225mm C.Fix/B.Fix Pull Handle	19mm & 20mm Diameter, 225mm Centres, SAA & GAA Finishes
AR2023/300CF/BF	300mm C.Fix/B.Fix Pull Handle	19mm & 20mm Diameter, 300mm Centres, SAA & GAA Finishes
AR2023/425CF/BF	425mm C.Fix/B.Fix Pull Handle	19mm & 20mm Diameter, 425mm Centres,SAA & GAA Finishes
AR2023/600CF/BF	600mm C.Fix/B.Fix Pull Handle	19mm & 20mm Diameter, 600mm Centres, SAA & GAA Finishes
AR205/150FF-P	Face Fix Pull Handle on Plate	19mm & 20mm Diameter, 150mm Centres, 225mm Plate, SAA & GAA Finishes
AR205/225FF-P	Face Fix Pull Handle on Plate	19mm & 20mm Diameter, 225mm Centres, 300mm Plate, SAA & GAA Finishes
AR205/300FF-P	Face Fix Pull Handle on Plate	19mm & 20mm Diameter, 300mm Centres, 375mm Plate,SAA & GAA Finishes

Grade 316 Stainless Steel Pull Handles

D- Shaped Pull Handles

Reference	Fixing type	Description
AR3616/150BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/225BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/300BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/425BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/600BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/150BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, SSS & PSS Finishes
AR3616/225BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, SSS & PSS Finishes
AR3616/300BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, SSS & PSS Finishes
AR3616/425BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, SSS & PSS Finishes
AR3616/600BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, SSS & PSS Finishes
AR3616/150CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/225CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/300CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/425CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/600CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/150CF/BF	150mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/225CF/BF	225mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/300CF/BF	300mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/425CF/BF	425mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3616/600CF/BF	600mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes

Grade 316 Stainless Steel Pull Handles

T-Bar Shaped Pull Handles

Reference	Fixing type	Description
AR3617/150BB	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/225BB	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/300BB	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/425BB	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/600BB	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/150BF	19mm Dia T-Bar Pull Handle	19mm & 22mm Diameter, 150mm Centres, SSS & PSS Finishes
AR3617/225BF	19mm Dia T-Bar Pull Handle	19mm & 22mm Diameter, 225mm Centres, SSS & PSS Finishes
AR3617/300BF	19mm Dia T-Bar Pull Handle	19mm & 22mm Diameter, 300mm Centres, SSS & PSS Finishes
AR3617/425BF	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 425mm Centres, SSS & PSS Finishes
AR3617/600BF	19mm Dia T Bar Pull Handle	19mm & 22mm Diameter, 600mm Centres, SSS & PSS Finishes
AR3617/150CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/225CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/300CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/425CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/600CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/150CF/BF	150mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/225CF/BF	225mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/300CF/BF	300mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/425CF/BF	425mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR3617/600CF/BF	600mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes

Grade 304 Stainless Steel Pull Handles

D- Shaped Pull Handles

Reference	Fixing type	Description
AR9616/150BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/225BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/300BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/425BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/600BB	Back-to-Back Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR404/225BB	Back-to-Back Fix Pull Handle	19mm Diameter, 225mm Centres, PB PVB Finish
AR404/300BB	Back-to-Back Fix Pull Handle	19mm Diameter, 300mm Centres, PB PVB Finish
AR404/425BB	Back-to-Back Fix Pull Handle	19mm Diameter, 425mm Centres, PB PVB Finish
AR9616/150BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, SSS & PSS Finishes
AR9616/225BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, SSS & PSS Finishes
AR9616/300BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, SSS & PSS Finishes
AR9616/425BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, SSS & PSS Finishes
AR9616/600BF	Bolt Through Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, SSS & PSS Finishes
AR403/150BF	Bolt Through Fix Pull Handle	19mm Diameter, 150mm Centres, PB PVB Finish
AR403/225BF	Bolt Through Fix Pull Handle	19mm Diameter, 225mm Centres, PB PVB Finish
AR403/300BF	Bolt Through Fix Pull Handle	19mm Diameter, 300mm Centres, PB PVB Finish
AR403/425BF	Bolt Through Fix Pull Handle	19mm Diameter, 425mm Centres, PB PVB Finish
AR403/600BF	Bolt Through Fix Pull Handle	19mm Diameter, 600mm Centres, PB PVB Finish
AR9616/150CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/225CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/300CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/425CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/600CF	Concealed Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR402/225CF	Concealed Fix Pull Handle	19mm Diameter, 225mm Centres, PB PVB Finish
AR402/300CF	Concealed Fix Pull Handle	19mm Diameter, 300mm Centres, PB PVB Finish
AR402/425CF	Concealed Fix Pull Handle	19mm Diameter, 425mm Centres, PB PVB Finish
AR402/600CF	Concealed Fix Pull Handle	19mm Diameter, 600mm Centres, PB PVB Finish
AR9616/150CF/BF	150mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 150mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/225CF/BF	225mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 225mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/300CF/BF	300mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 300mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/425CF/BF	425mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 425mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes
AR9616/600CF/BF	600mm C.Fix/B.Fix Pull Handle	19mm & 22mm Diameter, 600mm Centres, 6mm & 8mm Depth Rose, SSS & PSS Finishes

Grade 304 Stainless Steel Pull Handles		
Mitred Pull Handles		
AR9614/225-BF	19x225mm Centres	SS304 Round Bar Mitred Pull Handle, Bolt Fix
AR9614/300-BF	19x300mm Centres	SS304 Round Bar Mitred Pull Handle, Bolt Fix
AR9614/425-BF	19x425mm Centres	SS304 Round Bar Mitred Pull Handle, Bolt Fix
AR9614/600-BF	19x600mm Centres	SS304 Round Bar Mitred Pull Handle, Bolt Fix
AR9614/225-BB	19x225mm Centres	SS304 Round Bar Mitred Pull Handle, Back to Back Fix
AR9614/300-BB	19x300mm Centres	SS304 Round Bar Mitred Pull Handle, Back to Back Fix
AR9614/425-BB	19x425mm Centres	SS304 Round Bar Mitred Pull Handle, Back to Back Fix
AR9614/600-BB	19x600mm Centres	SS304 Round Bar Mitred Pull Handle, Back to Back Fix

HOPPE Nylon Pull Handles

Reference	Description
AR602 – Straight pull handle	Concealed fix, bolt fix & back to back
AR603 – Cranked pull handle	Concealed fix, bolt fix & back to back
AR604 – ‘V’ shaped pull handle	Concealed fix, bolt fix & back to back
AR605 – Semi-circular pull handle	Concealed fix, bolt fix & back to back

The Nylon pull handle range is approved in various colours.