

STAKKAbox™

ULTIMA Connect

Installation Guide

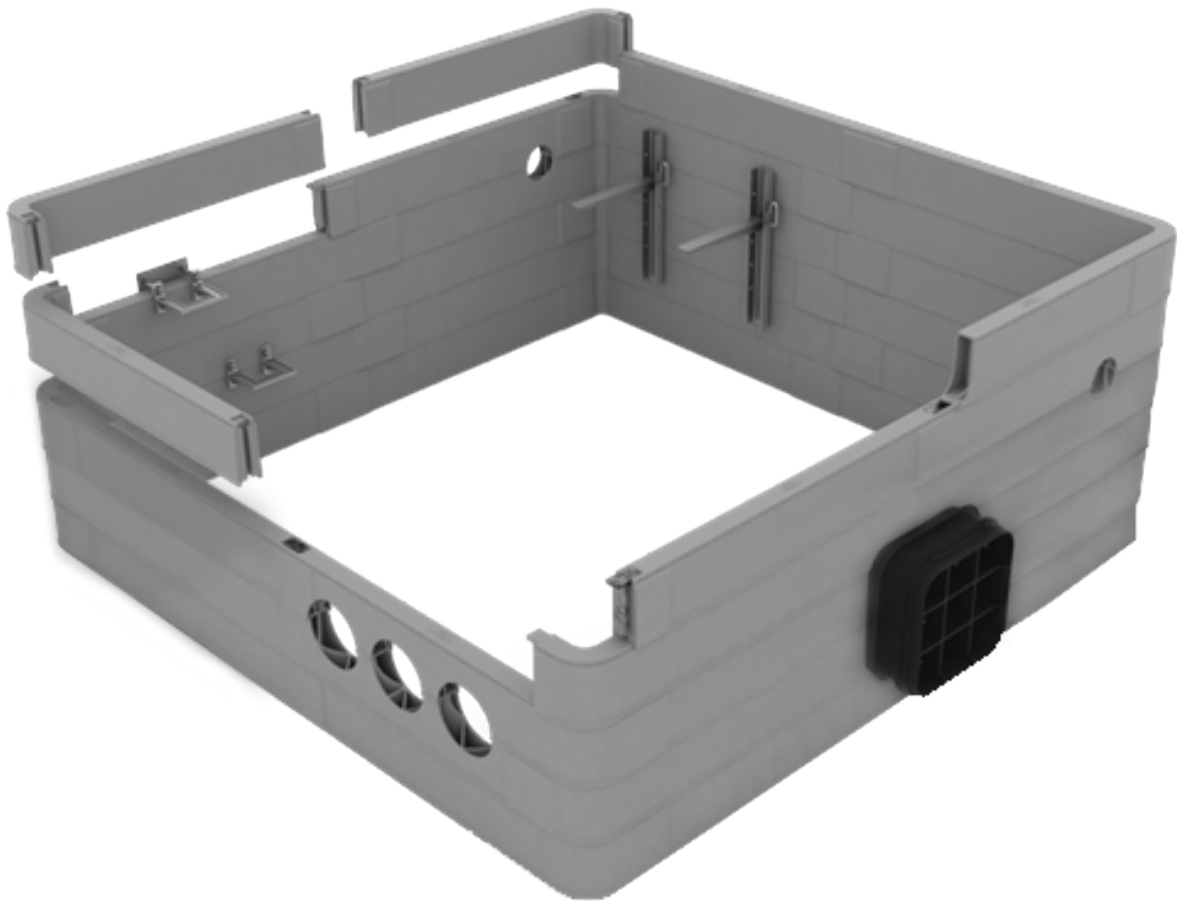


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1. Introduction

This guide addresses the method and detail for the installation of the STAKKAbox™ ULTIMA Connect access chamber system. The purpose is to serve as a guideline, and is not intended for any specific construction project.

It is understood there are alternative ways that might be required and/or recommended based on site or project conditions. Oldcastle Infrastructure reserves the right to alter these guidelines and encourages contact with the business or its representatives to review any possible modification to these notes prior to commencing installation.

2. Product Overview

The STAKKAbox ULTIMA Connect is a modular scalable solution which can be delivered pre-built or can be built on-site with easily connectible components. STAKKAbox ULTIMA Connect corner components are manufactured in left and right 'handed' designs, which offer the ability to offset joints between ring sections in order to provide a brick-worked design.

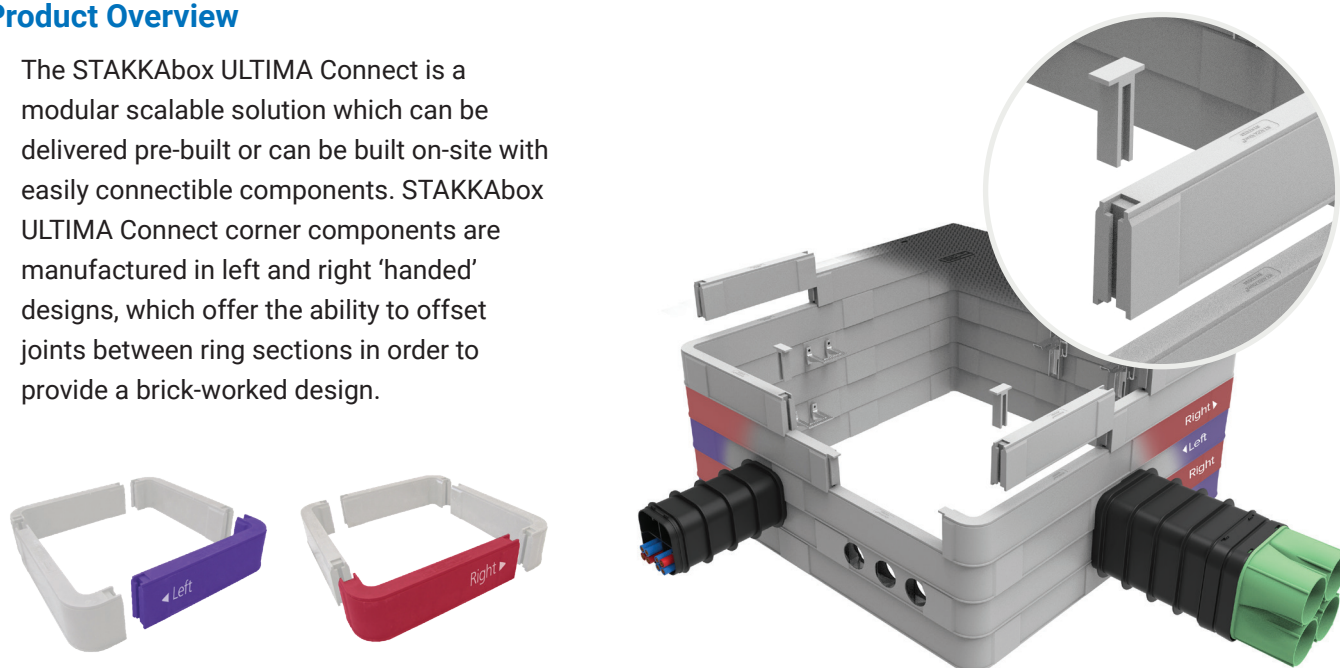


Table 1 – Installation Guidelines

Product		ULTIMA & ULTIMA CONNECT NOTE: Guidelines apply to ULTIMA/ULTIMA Connect chamber depths ≤ 2400m ^[1]								
EN124 Group (Refer Fig.1)		1 & 23			3			4 & Trackside Areas		
Group Description		For use in pedestrian areas where there is only occasional vehicular access			Areas with controlled, slow-moving traffic, such as car parks (excluding carriageways)			For use in areas where cars and lorries have frequent access, including carriageways, hard shoulders and the track support zone		
Backfill Bracing		Chamber sidewall >1000mm but ≤2000mm requires single central bracing Chamber sidewall >2000mm requires bracing for every 1000mm interval as a minimum Cross bracing should be the full depth of the chamber								
Backfill [2] [3] [4] [5]	Sidewall Length	≤1310mm	>1310mm to ≤1800mm	>1800mm to ≤2500mm	≤1310mm	>1310mm to ≤1800mm	>1800mm to ≤2500mm	≤1310mm	>1310mm to ≤1800mm	>1800mm to ≤2500mm
	Base Material & Depth	100mm of wall compacted granular material	100mm of dry lean mix concrete (CBM 4)		100mm of dry lean mix concrete (CBM 4)		150mm of dry lean mix concrete C20	150mm of dry lean mix concrete C20		150mm of dry lean mix concrete C20 with A393 mesh
	Material Type & Width of Backfill	Minimum of 100mm of well compacted granular material (i.e. Type 1 or similar)	Minimum of 150mm of well compacted gravel material		Minimum of 100mm of well compacted granular material		Minimum of 150mm of well compacted granular material (i.e. Type 1 for similar)	Minimum of 150mm of well compacted granular material (i.e. Type 1 for similar)		Minimum 100mm C30 concrete surround
NOTE 1: These are generic installation guidelines and Cubis recognises that installation conditions may vary by project – please contact Cubis technical if you wish to discuss your project requirements. For chamber sizes that are > 2500mm in side wall length and > 2400mm in depth please contact the Cubis Systems Technical department, technical@cubis-systems.com										
NOTE 2: The backfill requirements for each EN124 Group relates to where the chamber will be installed, rather than the load rating on the cover. Therefore, if a chamber is specified with a D400 rated cover but will be installed in the footway, the backfill requirements for a chamber installed in a footway apply.										
NOTE 3: Minimum Excavation Footprint, 100mm to 200mm (depending on specified backfill) or width of compacting equipment, whichever is greater.										
NOTE 4: Type 1, also known as MOT1/DOT Type 1, can be made from Granite, Limestone or clean Crushed Concrete. The product is crushed to 40mm down to dust creating an aggregate containing a range of particle sizes in compliance with the Department of Transport Specification for Highway Works, clause 803 (SHW 803).										
NOTE 5: Calculations are based on a 28 day strength, if the chamber is to be subjected to vehicular traffic prior to this, the concrete strength should be altered to accommodate the required timeline.										
NOTE 6: CBM4 has a minimum of 1:2:4 cement:sand:aggregate ratio										

Table 1 – Installation Guidelines (Continued)

Product		ULTIMA & ULTIMA CONNECT NOTE: Guidelines apply to ULTIMA/ULTIMA Connect chamber depths ≤ 2400m ^[1]			
EN124 Group (Refer Fig.2)		5		6	
Group Description		For use in areas where high wheel loads are imposed such as loading areas for docks.		For use in areas where extremely high wheel loads are imposed such as aircraft pavements.	
Backfill Bracing		Chamber sidewall ≤1000mm but ≤2000mm requires single central bracing Chamber sidewall >2000mm requires bracing for every 1000mm interval as a minimum Cross bracing should be the full depth of the chamber			
Backfill [2] [3] [4] [5]	Sidewall Length	≤1310mm	>1310mm	≤1310mm	>1310mm
	Base Material & Depth	150mm of dry lean mix concrete C20	Contact Cubis Systems	150mm of dry lean mix concrete C20with A393 mesh	Contact Cubis Systems
	Material Type & Width of Backfill	Minimum of 150mm of well compacted granular material (i.e. Type 1 or similar)	Contact Cubis Systems	Minimum 100mm C30 concrete surround	Contact Cubis Systems
NOTE 1: For chamber sizes that are >1310mm in side wall length and >2400mm in depth please contact the Cubis Systems Technical department, technical@cubis-systems.com.					
NOTE 2: The backfill requirements for each EN124 Group relates to where the chamber will be installed, rather than the load rating on the cover. Therefore, if a chamber is specified with a D400 rated cover but will be installed in the footway, the backfill requirements for a chamber installed in a footway apply.					
NOTE 3: Minimum Excavation Footprint, 100mm to 200mm (depending on specified backfill) or width of compacting equipment, whichever is greater.					