



Carson Industries is the world's largest manufacturer of pre-formed access / manhole chambers and Multi Duc systems, with in excess of 50 million chambers and 1million Multi Ducs installed world-wide, over the past 40 years.

The Carson Industries production facility has been in operation since 1993 and services the European and Middle Eastern markets.

The Carson chamber products are manufactured from High Density Polyethylene, (HDPE), using the unique Structural Foam Moulding process, which produces strong yet lightweight products, which are easy to handle on site and offer significant installation savings. They do not require expensive lifting equipment or concrete backfill surround. The speed of installation makes it possible to complete the installation without having to revisit the site at a later stage.

The products are extensively used across Europe in the Railway (Iarnrod Eireann, LUAS, Network Rail (UK) etc), Telecom & CATV (Eircom, BT, Telewest, NTL, etc), Water, Gas and Electrical utilities, Golf Courses, Drainage, Civil projects etc.

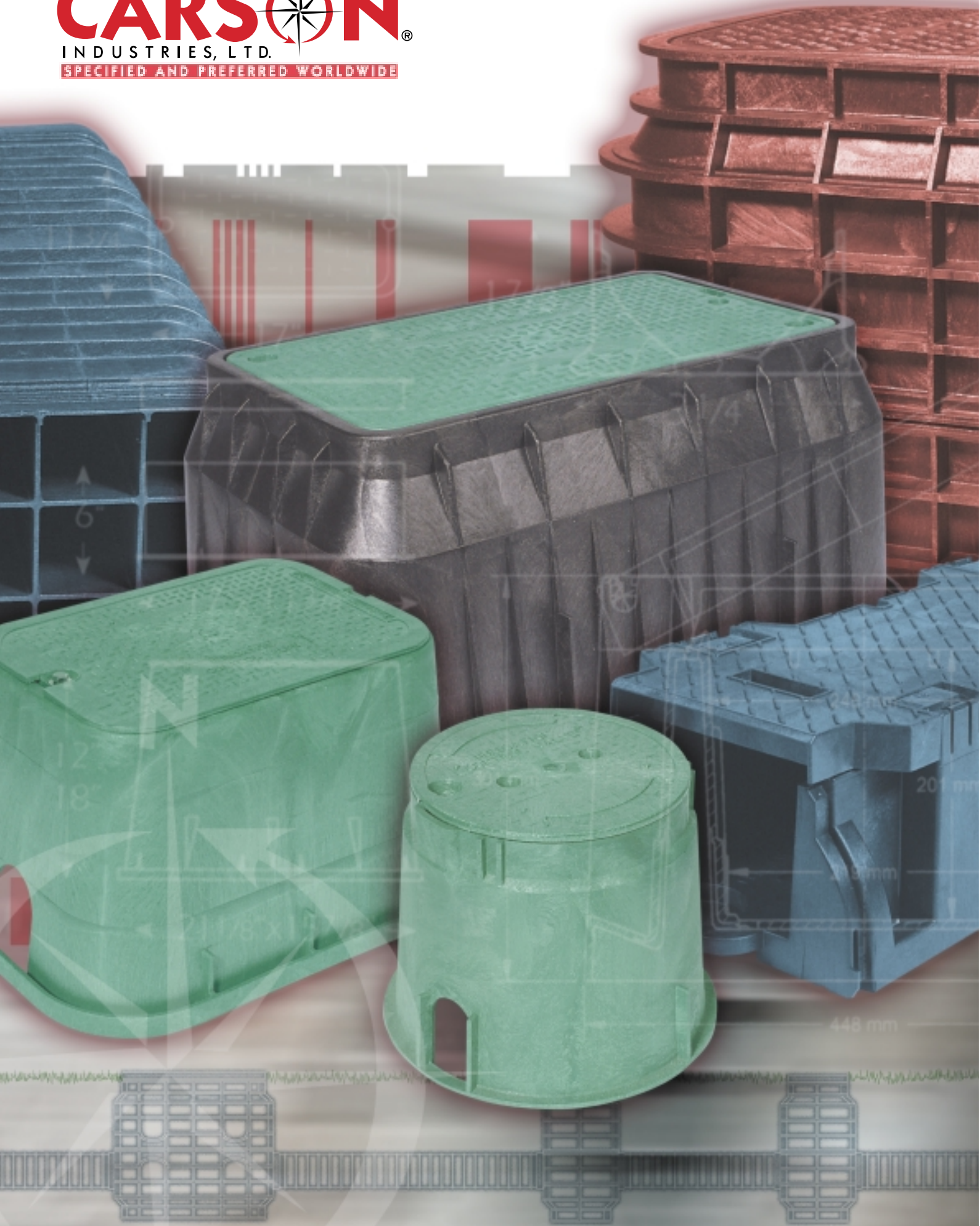
In addition to the standard one piece Small and Medium Box Series, Carson Industries can also offer the modular Polyvault Series. These modular chambers can be adjusted in length, width and height in accordance with your projects specific requirements.

A selection of new 'Ring Stacking Chambers', Ref: Utility Rings, Footway Fortress and Carriageway Fortress, have recently been developed. These chambers enable the contractor to build the chamber to the depth required and are particularly suitable to applications where the depth of existing duct is unknown or where unforeseen obstacles are uncovered. The Carriageway Fortress is the only chamber, which is certified for use in EN124D400 and EN124E600 roadway applications.

The Structural Foam Moulded HDPE products can be easily cut and drilled on site for duct entries and the fitting of chamber furniture and steps. Alternatively, these duct entries and fittings can be pre-installed at the Carson production facility.

All of the chambers can be fitted with a HDPE, Ductile Iron or Concrete cover and frame, depending on the EN124 loading requirement. These covers can also be fitted with a range of security locks and keys and will carry the relevant customer logo and markings.

Whatever your application, there's a Carson chamber and cover solution that meets your dimension and loading requirements.



Company Profile

Carson Industries was founded in 1969 in La Verne, California (U.S.A). With six manufacturing facilities worldwide, Carson serves a global market. Since 1993 the Carson production facility in Roscommon, Ireland has served the European, African and the Middle Eastern markets with its extensive product range, of over 200 sizes, of underground chambers and accessories.

Carson Industries is the world's largest manufacturer of structural foam chambers. Continuous efforts are made to improve the service, delivery time and product range to cater for ever changing customer requirements. The dedication to global quality, global service and global commitment is unsurpassed. With more than 35 years experience and in excess of 30 million chambers installed worldwide, Carson Industries has a solution for all applications.



Features & Advantages of Carson Preformed Chambers



Faster & Cheaper Installation

- Same day installation completion
- No return to site required
- Faster reopening of footpath
- No expensive lifting equipment
- Consistent quality



Strong and Resistant

- HDPE material is used
- Foam injection process
- Low pressure moulding reduces stress for a long lasting product
- High resistance to chemical and soil agents



Value-Added Solutions

- Carson chambers, covers, frames, rising frames, chamber furniture etc offer a complete "one stop installation solution".

Reduced Labour Costs

- Easy to handle
- No skilled labour required
- Easy to drill & cut on site
- Same day installation reduces overnight accidents & insurance claims



Customized Solutions

- Chamber furniture/duct entries can be prefitted, fitted on site or retro fitted
- Chamber dimensions and shapes can be modified to suit customer needs



Carson Chambers Series

Medium and Small Box Series

- A broad range of one piece chambers in various lengths, widths and heights
- Cover options in HDPE, ductile iron and concrete
- Extension chambers
- Bottom plates/floors & grates
- Insulation pieces
- Option of using "as-dug", gravel or concrete backfill*



Twin Wall Series

- A broad range of Twin Wall one-piece chambers in various lengths, widths and heights
- Cover options in ductile iron and concrete
- Drop-in covers without frame
- Bottom plates/floors
- Option of using "as-dug", gravel or concrete backfill*



Modular Polyvault Series

- Modular chambers allow adjustment, during manufacture, in length, width and height to suit project requirements
- Modularity allows chambers to be manufactured to match the specific dimensions required
- Cover options in HDPE, ductile iron and concrete
- Bottom plates/floors
- Option of using "as-dug", gravel or concrete backfill*



Stackable Ring Chambers

- Chambers consist of 150 mm high rings designed to stack into each other
- Cover options in ductile iron and concrete
- Bottom plates/floors
- Suitable for carriageway installations (C2 chamber)
- Unique to market
- Tested & certified for EN124 D600 applications (C2 chamber)
 - Test replicated 20 years of an industrial zone traffic simulating dynamic and static loads
 - Dynamic load on installed chamber: 500,000 passes by a 40kN truck wheel
 - Static load on free standing chamber: 600 kN vertical load



*All installation materials and procedures should be in accordance with the loading requirements and the relevant local authority installation guidelines.

Chamber Accessories

Chamber Covers & Frames

- HDPE, ductile and concrete covers are available for Carson chambers
- Customized covers: artificial grass, dyed concrete covers
- Galvanised steel rising frame available on ductile and concrete covers to cater for gradients and footpath resurfacing
- Customer logos, anti-vandalism security bolts and lifting keys available



Chamber Furniture & Accesories

- Insulation pieces for HDPE covers and mid-chamber installation are available for extra temperature protection
- Step irons, cable bearers & brackets, duct entries can be pre-fitted, fitted during installation or retrofitted after installation.
- Accessories for water meter connections can also be pre-fitted.



Chamber Bottom Plates/Floors

- A range of prefitted or freestanding base plates are available for the Carson chamber range.
- All chambers can be fitted with bottom plates, irrespective of size.
- Drainage grates are also available to be used as floors for the majority of Carson product range.



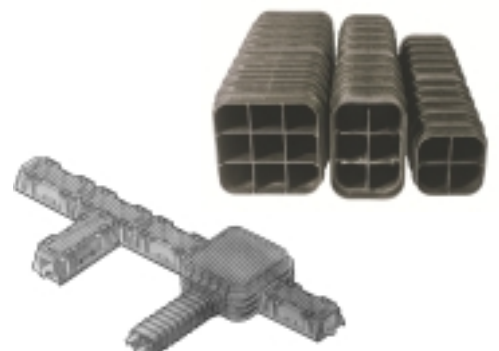
Railduct System

Railduct system is the concrete replacement technology for installation of trackside signalling, fibre optic and telecommunications cable systems for railway projects. Among several other benefits Railduct installation is 4 to 5 times faster than existing technologies.



MultiDuc System

MultiDuc System is the modern way of constructing UTX (Under Track Crossings) and maximising valuable track possessions. MultiDuc consists of a duct bank option with 4, 6 and 9 way options, a broad range of accessories are also available. MultiDuc parts combined with Polyvaults allow Carson customers to achieve significant cost savings in UTX installations. MultiDuc system is the preferred method used by several national rail companies in Europe and the U.S.

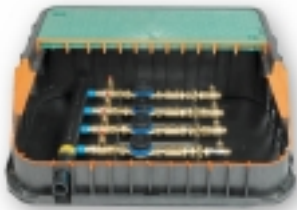


Carson chambers are used in numerous applications: Telecom & CATV, Utilities, Turf & Irrigation, Railways and Transportation



Telecom & CATV

- Joint chambers
- Pull chambers
- Junction chambers
- Inspection chambers
- Turning chambers



Utilities – Water, Gas, Electricity

- Meter chambers
- Water pump chambers
- Inspection chambers
- Pedestal chambers
(customized product)
- Link box chambers
- Distribution box chambers
- Cable installation in electricity plants



Turf & Irrigation

- Equipment control boxes
- Valve boxes on the majority of
world's golf courses
- Artificial grass covers
- Bottom grates
- Innovative products: Hosenclose



Railways/Transportation

- Railduct trackside channel
- MultiDuc UTX
(under track crossing) ductbank
- Trackside & UTX chambers
- Full solution for cable
installation



PRODUCT REFERENCE	CLEAR OPENING (MM)	DEPTH OPTIONS (MM)	PRODUCT REFERENCE	CLEAR OPENING (MM)	DEPTH OPTIONS (MM)	
SINGLE WALL CHAMBERS			POLYVAULT CHAMBERS			
708	Ø150	230	1836	915x470		
910	Ø240	265	2424	610x610		
1419	395x265	170, 310, 455, 610	2436	900x610		
1220	510x340	180, 315, 385, 445	2448	1220x610	Depths from 470 to 2500 mm can be manufactured	
2619	650x465	460, 640, 790	2454	1370x610		
1324 C	600x355	390, 780	2460	1510x610		
1324 B	565x325	455, 660, 910	3636	910x900		
1730	780x450	250, 465, 715, 930	3660	1505x910		
JB23	460x225	490	3684	2030x910		
JB26	725x255	600				
TWIN WALL CHAMBERS			Polyvault Chambers with Lengths & Widths Ranging from 400 mm to 5000 mm + can be manufactured			
JB11	380x255	625	RING CHAMBERS			
JB12	730x260	620	Carriageway	1310x610		Rings of 150 mm can be stacked to reach the desired chamber depth
TW1/1	560x240	365	Footway Large	915x915		
TW1/2	560x260	365	Footway Med.	915x445		
TW1/ED	560x260	605	Footway Small	445x445		
TW2	600x450	500				
TW3	600x450	700				
TW4	750x600	500				
TW5	750x600	700				

*Other dimensions and made to order products can also be manufactured.

PRODUCT REFERENCE	LENGTH (MM)	SECTION (MM)
Railduct & MultiDuc		
Railduct	1000	
4W MultiDuc	1065	
6W MultiDuc	1065	
9W MultiDuc	1065	

CARSON MANHOLE



CARSON MANHOLE



CARSON MANHOLE

CARSON
INDUSTRIES, LTD.



RAILDUCT INSTALLATION

Railducts



Railducts



Railducts



Railducts



EN124 Standard Classification

Carson box, cover and frame solutions are tested and rated against EN124 standards. The cover and frame is marked and fully compliant with the standard. The standard specifies features and strengths to suit different loading profiles found in public spaces from footpaths to airports.

It is the responsibility of the engineer to ensure that the correct product is specified:

“The appropriate class of manhole top or gully top to be used depends upon the place of installation. The selection of the appropriate class is the responsibility of the designer. Where there is any doubt the stronger class should be selected.”

Clause 5 EN124

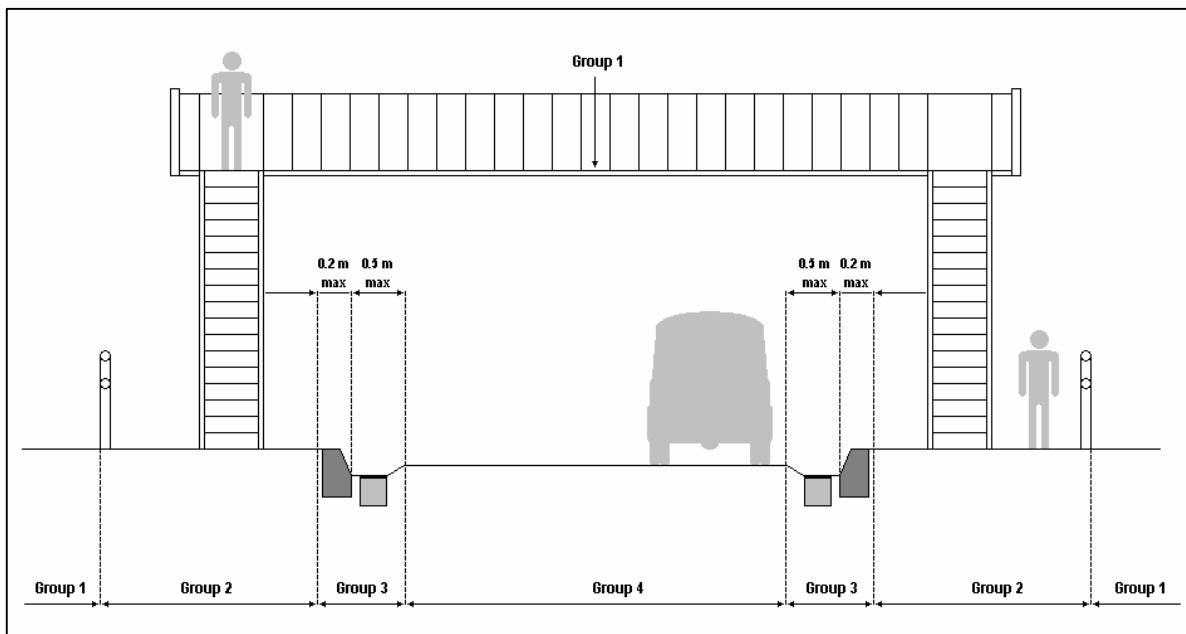


Fig No.2 – EN124 Applications

GROUP	LOADING DESCRIPTION	EN124 CLASS	EN124 TEST LOAD
1	Areas inaccessible to motor vehicles	A15	15kN
2	Footways, pedestrian areas etc.	B125	125kN
3	Gully tops in kerbside channels of roads	C250	250kN
4	Carriageways of roads (Heavy Duty)	D400	400kN
5	Areas imposing high wheel loads	E600	600kN
6	Areas imposing particularly high wheel loads	F900	900kN

Iron: Ductile or Grey?

Iron - Ductile or Grey

Iron covers are formed by casting metal, but the two types used for covers and frames have very different properties:-

Ductile Iron is known as Spheroidal Graphite (SG), or Nodular Iron.



Ductile Iron has all the traditional qualities associated with Grey Iron and is chemically almost identical.

By treating iron with magnesium, the inherent weak nature of the flake graphite structure is

'Grey' Iron is known as Flake Graphite Iron, Flake or Cast Iron (GrauGuss or GG in Germany).



Grey iron is the most traditional in use, but has limitations in use where the speed and weight of modern traffic imposes great demands in terms of product strength, impact resistance and durability.

converted to a strong spheroidal graphite structure, known as Ductile Iron.

• The obvious advantages of specifying and using Ductile Iron Covers are:-

- Greater Strength
- Higher Impact Resistance
- Better Durability

The less obvious advantages include:-

- Lighter castings for ease of use and transportation.
- Reduced risk of injury in handling.
- Less waste from breakage in use and installation