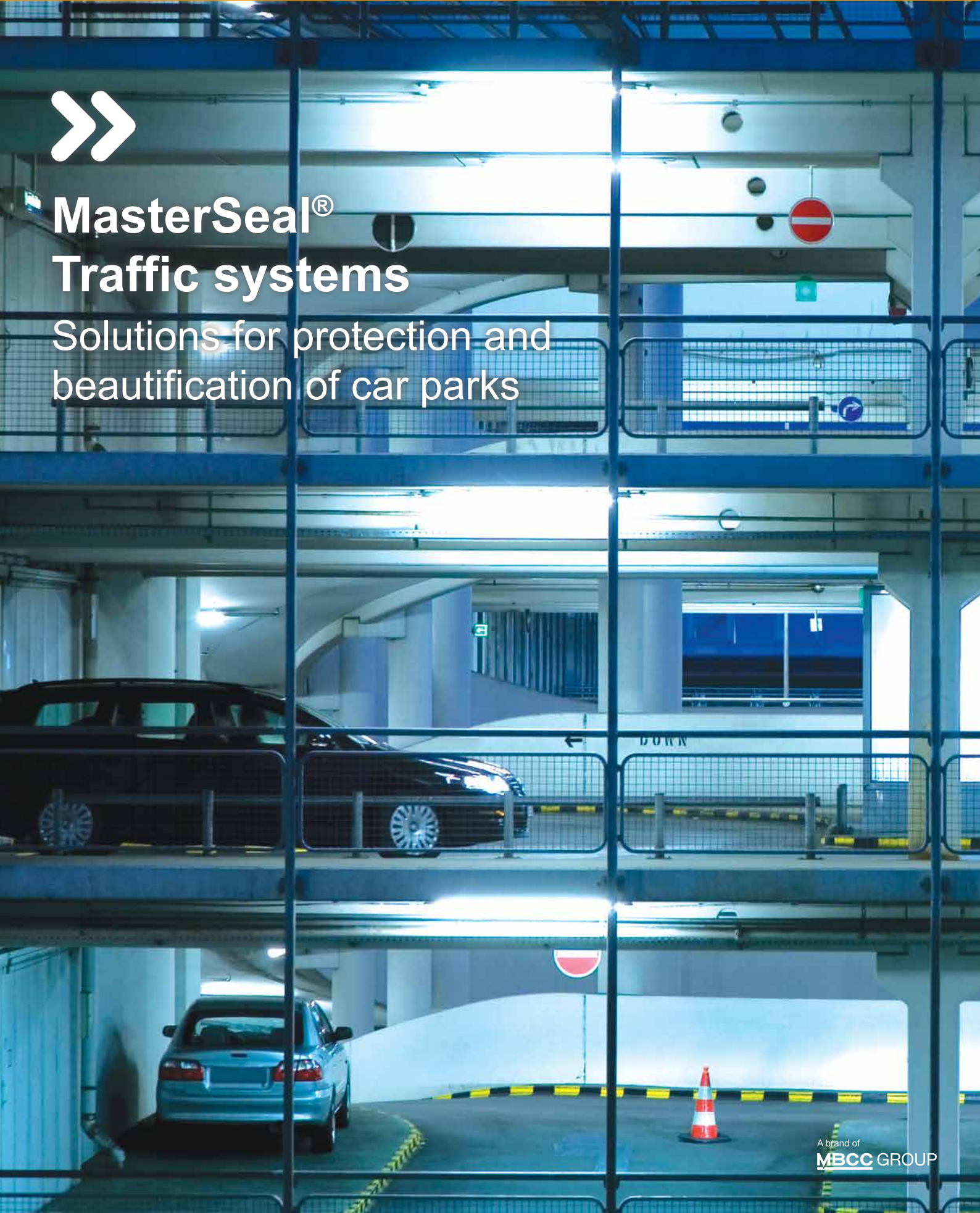




# MasterSeal<sup>®</sup> Traffic systems

Solutions for protection and  
beautification of car parks







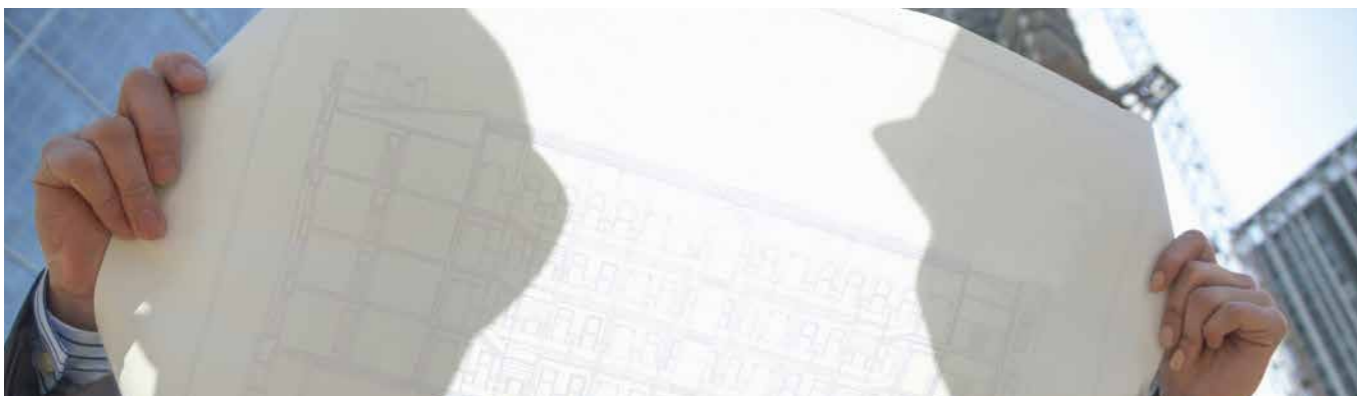
## Master Builders Solutions

The **Master Builders Solutions** brand brings all of its expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global Master Builders Solutions technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair and protection solutions, performance grouts, performance flooring solutions.

Working with some of the major builders and building owners, we can provide individual tailored solutions to meet the waterproofing needs of the parking structure. The resulting range of waterproofing and coating systems reduce the risk of water ingress to the underlying concrete and extends the life of the structure.





## MasterSeal® Traffic systems

### Protective and repair coatings for parking structures

Parking structures are assaulted with a variety of impacts that will eventually lead to deterioration and the need for repair. Employing deck protection when the structure is built, although increasing the building cost, can save many times that investment in elimination or reduction in repairs. Parking structures have to cope with vibration, abrasion, chemical attack (from vehicle fluids and possibly de-icing salts) and physical attack (from damage by bumps and scrapes and the constant movement of vehicles). A deteriorated parking structure may need as extensive repairs as a neglected wharf. Many parking structures are commercial ventures in their own right or part of a commercial venture like a shopping centre and downtime is a major revenue loss for the owners.

MasterSeal Traffic systems have been developed with the maximizing of protection and the minimizing of downtime in mind. The MasterSeal proprietary polyurethane and polyurea technology, including spray applied very fast cure membranes, a range of primers, wearcoats and topcoats to enable the building of a system for even the highest traffic densities. Our specialists can work with you to determine the most cost effective solution for your structure and can advise on other aspects like concrete repair or protective coatings for other parts of the structure.

Features	Benefits
Fast setting	Immediate waterproof protection after 1 minute
Spray applied	Fast installation up to 700m <sup>2</sup> per day
Spray applied / fast setting	Able to waterproof vertical surfaces without running
Seamless	No joints for water to penetrate
Range of slip resistances	Suitable for ramps and flat areas
Separate wearcoat	Engineered separate wearcoat to take the turning forces and protect the membrane from damage
Solvent free	Low odour allowing installation on occupied buildings
Trafficable	Suitable for car and light truck traffic
Fully bonded	No place for water to track if punctured
Repairable	Easy repair of damaged areas with compatible hand applied materials
Onsite quality check	Test using holiday tester before topcoat application eliminates need for water ponding test. Thickness and adhesion can also be tested on site giving peace of mind to owner

#### New parking structures

The rapid urbanization of many countries has created the need for condominiums, shopping malls and office towers and coupling this with the rise in vehicle ownership and the need for parking increases rapidly. Another growing trend is mixed use developments where office, shopping, leisure and living are combined in one development. In these developments, there often the need to have occupied space below parking areas and thus the need for waterproof trafficable deck coatings.

The MasterSeal Traffic systems can accommodate the various levels of traffic encountered from shopping malls to condominiums via the use of separate wear coats to cope with the higher levels of abrasion. Working with our sales team, the designer can select the right performance level for his needs and for the long term protection of the structure. Not all parts of the parking structure require waterproofing and for this, we have our MasterSeal Traffic abrasion resistant coatings that can be mixed and matched with the waterproof coatings to give total parking deck solution.

New parking structures have some unique challenges often not met by some elastomeric waterproof coatings. When the structure has not been fully loaded the cracks may not all have occurred. Thus when cracking occurs after the installation of the waterproofing

membrane, then the cracks may reflect through the membrane leaving the structure vulnerable to water ingress. The MasterSeal Traffic 2000 and 2500 heavy duty systems use a membrane system with a special ratio of tensile strength and adhesive strength to allow the membrane (if a crack occurs after installation) to be accommodated by a small section of the membrane delaminating from the primer layer so that it can stretch and contract like a joint would. This attribute makes the MasterSeal Traffic systems almost unique in the market with this ability and the 25 years of use in decking applications attests to its success in this area. Additionally the ability to provide top coats in a range of colors allows the designer to use color to designate various areas of the parking structure and to have an attractive and light reflective coating system that will make the car park more attractive to patrons of the shopping mall or office block.

Some sections of the parking structure may not require the full protection of a waterproofing system and our MasterSeal non-waterproofing traffic systems are available to match the look of the MasterSeal Traffic systems but with lower cost. Based on polyurethane and epoxy systems they are hard wearing and abrasion resistant and the ideal situation for the intermediate decks where waterproofing is not required or where the base level is a slab on ground.







### Existing parking structures

Changing standards and neglect leave many parking structures in need of repair and revitalization. A parking structure may have damage from:

- chloride attack from de-icing salt use,
- cracks allowing water access to the reinforcing steel,
- abrasion from extensive traffic movements,
- mechanical damage from vehicle impacts.

Additionally the structure may want to take higher deadloads or to be extended by increasing the number of levels.

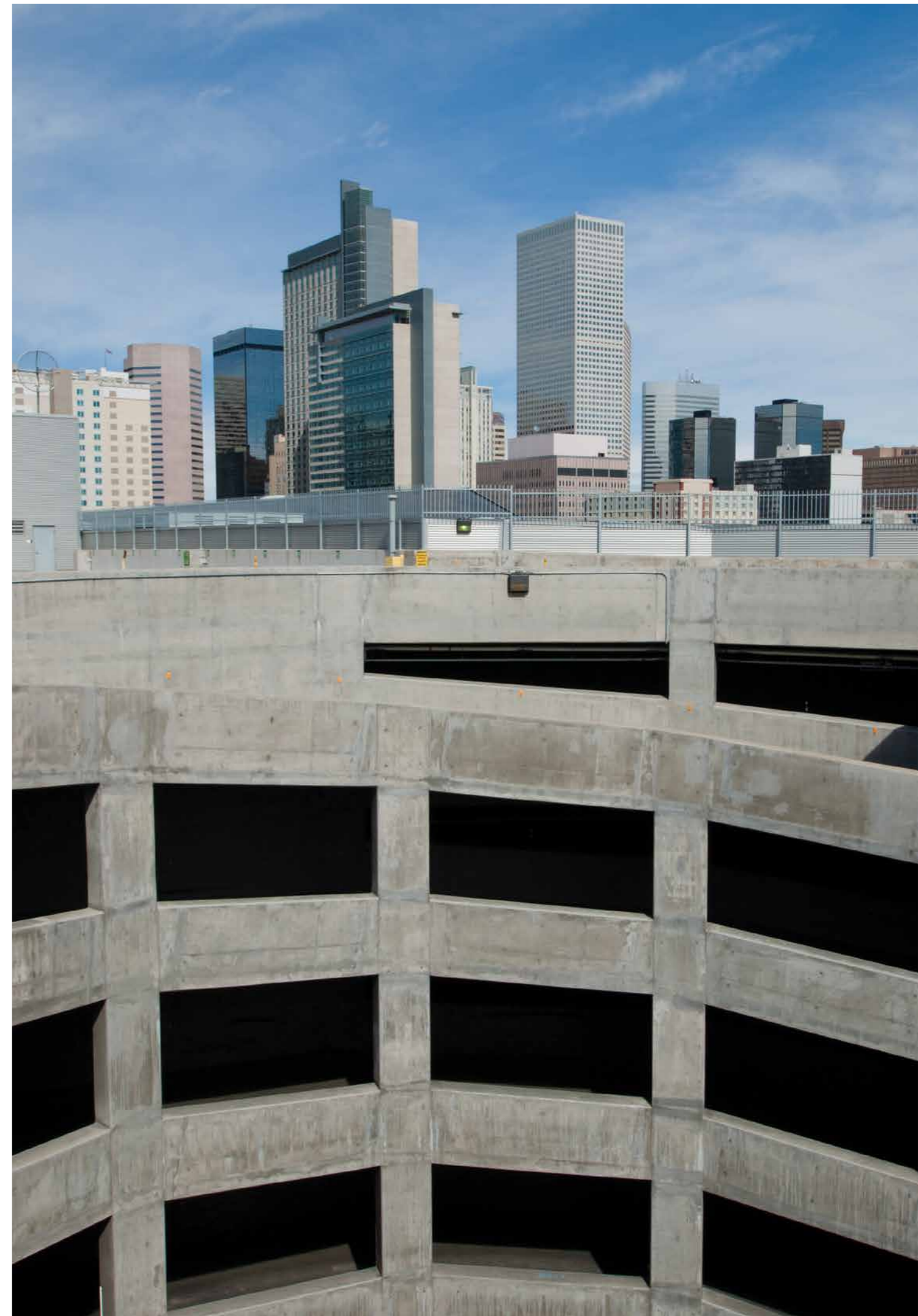
The damage caused by the de-icing salts and chloride attack requires repair and future protection from further deterioration. The MasterEmaco® repair mortars and MasterProtect® coatings and anode systems can be combined to give a full repair solution. Chloride attack will weaken a structure by accelerating corrosion of the reinforcing steel which if not treated will reduce the load carrying capacity of the structure. Removal of contaminated concrete, cleaning (and replacement if necessary) of the damaged reinforcing steel followed by the reinstatement of the damaged concrete and then application of MasterSeal waterproof trafficable membrane system and for other exposed areas MasterProtect coatings. In many cases the addition of sacrificial anodes can further extend the life of the structure by creating a current that passivates the steel over the longer term.

Some sections of the parking structure may not require the full protection of a waterproofing system and our MasterTop Traffic systems are available to match the look of the MasterSeal Traffic systems but with lower cost.

Based on polyurethane and epoxy systems, they are hard wearing and abrasion resistant and the ideal situation for the intermediate decks where waterproofing is not required or where the base level is a slab on ground. They are still able to provide good protection from salt and other contaminants and work to preserve your structure.

Not all parking structures are affected by de-icing salt damage and many are affected by carbonation, a process where the concrete reduces its alkalinity and the steel becomes susceptible to corrosion. Common in urban environments, repair of damage is essential and the prevention of further reduction in alkalinity by providing a barrier to the ingress of water is necessary. The MasterProtect anti carbonation barrier coatings and silane based impregnations are ideal for the long term protection of urban structures.

Additionally parking structures may have alternate uses or the need to be expanded and to this, the use of MasterBrace® carbon fibre strengthening can be used. Parking structures can be turned into shopping or entertainment areas which require higher load carrying capacity of the floors. The structure can have extra floors added requiring the foundations to be increased and having the columns strengthened without the need to lose valuable parking spaces that would be necessary if the columns were strengthened by making them bigger.





## MasterSeal Traffic systems

### MasterSeal Traffic 1500 MD

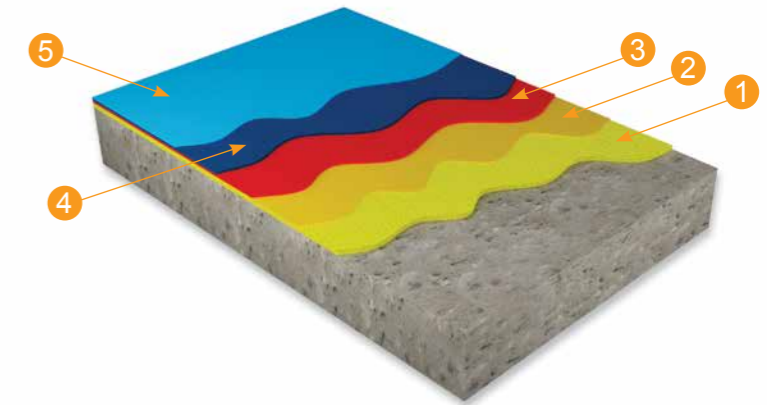
- Hand applied membrane
- Integrated wear coat and top coat
- Medium to heavy duty application foot to light vehicle traffic
- Intermediate decks with occupied space below
- Podiums for pedestrian traffic and occasional vehicle traffic



■	1	Primer Sand broadcast	MasterEmaco P 2525 or MasterSeal P 2525 Oven dried silica sand, size 0.3 - 0.8mm uniformly applied, not in excess
■	2	Membrane	MasterSeal M 200 pigmented single component polyurethane MasterSeal M 860 pigmented PU / PUR hand applied 2 component solvent free MasterSeal M 869 pigmented PU / PUR hand applied 2 component solvent free
■	3	Top coat Sand broadcast	MasterSeal TC 258 / 259 / 225, pigmented, PU, single component, elastic, UV and weather resistant Oven dried silica sand, size 0.3 - 0.8mm
■	4	Top coat	MasterSeal TC 258 / 259 / 225, pigmented, PU, single component, elastic, UV and weather resistant

### MasterSeal Traffic 2000 HD

- Hand applied membrane
- Separate wear coat for heavy duty operation
- UV protective top coat
- Suitable for heavy duty vehicle traffic on exposed and decks with occupied space below



■	1	Primer Sand broadcast	MasterTop P 660 / 688 polyurethane or epoxy fast set primers, MasterEmaco P 2525 or MasterSeal® P 2525 Oven dried silica sand, size 0.3 - 0.8mm uniformly applied, not in excess
■	2	Adhesion promoter**	MasterTop P 691 clear, PU, single component
■	3	Membrane	MasterSeal M 860 pigmented PU / PUR hand applied 2 component solvent free MasterSeal M 869 pigmented PU / PUR hand applied 2 component solvent free
■	4	Wear coat Sand broadcast	MasterSeal WC 880 / 881, pigmented, PU, 2 component, solvent free Oven dried silica sand, size 0.3 - 0.8mm
■	5	Top coat	MasterSeal TC 258 / 259 / 225, pigmented, PU, single component, elastic, UV and weather resistant

\*\* Over epoxy primers only



### MasterSeal Traffic 2500 HD

- Spray applied membrane
- Separate wear coat for heavy duty applications
- Fast cure system for rapid repair or reinstatement of membrane system
- Very heavy duty build ups possible for garbage collection areas or truck unloading areas
- Overnight return to service systems available



■	1	Primer	MasterTop P 660 / 688 polyurethane or epoxy fast set primers, MasterEmaco P 2525 or MasterSeal P 2525
		Sand broadcast	Oven dried silica sand, size 0.3 - 0.8mm uniformly applied, not in excess
■	2	Membrane	MasterSeal M 800 / M 820, pigmented, PU / PUR, spray applied, 2 component, solvent free
■	3	Wear coat	MasterSeal 880 / 881, pigmented, PU, 2 component, solvent free
		Sand broadcast	Oven dried silica sand, size 0.3 - 0.8mm
■	4	Top coat	MasterSeal TC 481, pigmented, polyaspartic, two component, elastic, UV and weather resistant MasterSeal TC 258 / 259 / 225 single component PU UV stable topcoat

### MasterSeal Traffic 1600 MD

- Hand applied PU based
- Non-waterproof
- Slip resistant



■	1	Primer	Primer depending on substrate
		Sand broadcast	Oven dried silica sand, size 0.3 - 0.8mm or 0.7 - 1.3mm uniformly applied, not in excess
■	2	Top coat (in two layers)	MasterSeal TC 258 / Sonoguard top coat, pigmented, PU, single component, elastic, UV and weather resistant

### MasterSeal Traffic 2100 HD

- Hand applied
- Highly slip resistant
- Hard wearing epoxy screed



■	1	Primer	Primer depending on substrate
		Sand broadcast	Oven dried silica sand, size 0.3 - 0.8mm or 0.7 - 1.3mm uniformly applied, not in excess
■	2	Top coat (in two layers)	MasterTop 1200 epoxy binder broadcast to excess with oven dried aggregate
■	3	Top coat	MasterTop 1200 binder with colour to seal top surface





# Car park protection and repair

A complete and totally intergrated solution

The top deck of a car park is the structure's most vulnerable surface, exposed to the elements as well as oil, acids, salts and UV radiation. To withstand such severe conditions, heavy-duty, UV-stable, elastomeric waterproofing systems are needed. They use a multi-layer build up system to ensure optimum performance in even the harshest environments and are available with a wide range of top coats.

Enclosed, intermediate and lower decks and bays are protected from weather conditions to a larger degree and are less susceptible to stress than top decks although still exposed to aggressive de-icing salts.

Turning circles and ramps are the areas that suffer the highest mechanical stress. A greater aggregate content in such zones increases wear resistance, producing a heavy duty, skid resistant surface for long-term protection.



1.	Turning circles and ramps	MasterSeal Traffic 2500 HD
2.	Driveways	MasterSeal Traffic 2500 HD parking bays MasterSeal Traffic 2000 HD
3.	Turning circles and ramps	MasterSeal Traffic 2500 HD
4.	Repair of facades, soffits and decks	MasterEmaco repair mortars and decks
5.	Intermediate decks non waterproof	MasterSeal Traffic 1500MD / 1600 MD / 2100 HD
6.	Coating of facades, columns, decks with	MasterProtect coatings or impregnations
7.	Strengthening of columns	MasterBrace system
8.	Showrooms and back of house activities.	MasterTop flooring
9.	Podiums and green roofs	MasterSeal Roofing systems
10.	Occupied space below	MasterSeal Traffic 2000 / 2500 HD





## Product selector

	Shopping mall				Condominium / office				Stadium / institutional						
	Exposed top deck	Exposed ramps	Occupied space below	Intermediate decks	loading docks / garbage collection	Exposed top deck	Exposed ramps	Occupied space below	Intermediate decks	loading docks / garbage collection	Exposed top deck	Exposed ramps	Occupied space below	Intermediate decks	loading docks / garbage collection
MasterSeal Traffic 1500 MD						●	●				●	●			
MasterSeal Traffic 2000 HD	●	●	●			●					●	●	●		
MasterSeal Traffic 2500 HD	●	●	●		●						●	●	●		●
MasterSeal Traffic 1600 MD								●					●		
MasterSeal Traffic 2100 HD				●	●					●					●



## Project references

Our competence in terms of both car park refurbishment and new build applications is based on many years experience gained across the world in a variety of climatic and service conditions.

We have specified, manufactured and supplied over 1 million m<sup>2</sup> of performance waterproofing, surfacing, repair and protection products to an international list of car park owners which include:



**MasterSeal Traffic 2500 HD**  
Ion Orchard car park, Singapore



**MasterSeal Traffic 2500 HD**  
MacRitchie reservoir car park, Singapore



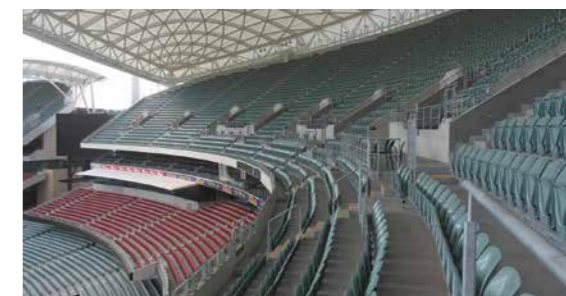
**MasterSeal Traffic 2000 HD**  
Auckland downtown car park, New Zealand



**MasterSeal Traffic 2500 HD**  
IKEA Leeds, United Kingdom



**MasterSeal Traffic 2500 HD**  
HKCLK Airport car park, Hong Kong



**MasterSeal Traffic 2000 HD**  
Adelaide Oval grandstand, Australia





# Master Builders Solutions for the Construction Industry

**MasterAir®**

Complete solutions for air entrained concrete

**MasterBrace®**

Solutions for concrete strengthening

**MasterCast®**

Solutions for the manufactured concrete product industry

**MasterCem®**

Solutions for cement manufacture

**MasterEmaco®**

Solutions for concrete repair

**MasterFinish®**

Solutions for formwork treatment and surface improvement

**MasterFlow®**

Solutions for precision grouting

**MasterFiber®**

Comprehensive solutions for fiber reinforced concrete

**MasterGlenium®**

Solutions for high performance concrete

**MasterInject®**

Solutions for concrete injection

**MasterKure®**

Solutions for concrete curing

**MasterLife®**

Solutions for enhanced durability

**MasterMatrix®**

Advanced rheology control for concrete

**MasterPel®**

Solutions for water tight concrete

**MasterPolyheed®**

Solutions for mid-range concrete

**MasterPozzolith®**

Solutions for water-reduced concrete

**MasterProtect®**

Solutions for concrete protection

**MasterRheobuild®**

Solutions for high strength concrete

**MasterSeal®**

Solutions for waterproofing and sealing

**MasterRoc®**

Solutions for underground construction

**MasterSet®**

Solutions for set control

**MasterSure®**

Solutions for extraordinary workability retention

**MasterTop®**

Solutions for industrial and commercial floors

**Master X-Seed®**

Advanced accelerator solutions for concrete

**Ucrete®**

Flooring solutions for harsh environments

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