Superstructure Material

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AWM Table:	**Bridges, Bridge Span**
Attribute:	**Superstructure Material**
Purpose:	To provide

Value	Description	Photo Example
Acrylic	Acrylic is a general purpose plastic used as a coating on superstructure elements to resist atmospheric degradation caused by exposure to the elements and improve the appearance of the bridge.	
Acrylonitrile Butadiene Styrene	Acrylonitrile butadiene styrene (ABS) is a thermoplastic polymer that is commonly used in a variety of applications. ABS is a strong, durable, and impact-resistant material that's well-suited for many industrial applications. It's also versatile and affordable, and can be processed using a variety of manufacturing techniques.	

Value	Description	Photo Example
Aggregate	A material or structure formed from a mass of fragments or particles loosely compacted together.	
Aluminium	Aluminium is a lightweight, silvery-white, and malleable metal that is ideal for accelerated construction and installation, offers a lower carbon footprint than other materials (when made using renewable energy), and lowers maintenance costs compared to concrete, steel, and wood designs, due to its high resistance to atmospheric corrosion.	
Aluminium/Glass		
Armco, Multi-plate	Armco Multi-Plate is a versatile, economical, and customisable product for bridges and culverts. It's made of corrugated steel plates that are bolted together on site.	

Value	Description	Photo Example
Armco, Nestable	Armco nestable barriers are steel barriers made from hot-dipped galvanised steel, which is coated with zinc to protect it from corrosion. They can be nested together when not in use.	
Armco, Super Spa		
Asbestos Cement	Asbestos cement is a composite building material consisting of cement and asbestos fibres pressed into thin rigid sheets and other shapes.	
Asphalt	Asphalt most often refers to: Bitumen, also known as "liquid asphalt cement" or simply "asphalt", a viscous form of petroleum mainly used as a binder in asphalt concrete.	
Asphaltic Concrete	Asphaltic concrete, also known as asphalt or blacktop, is a composite material used in construction for roads, parking lots, airports, and more. It's made from a mixture of coarse and fine aggregates, filler, and binder.	
Block		

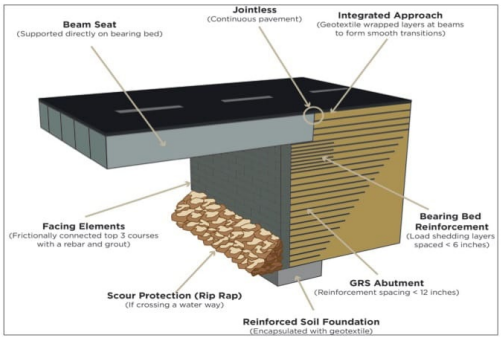
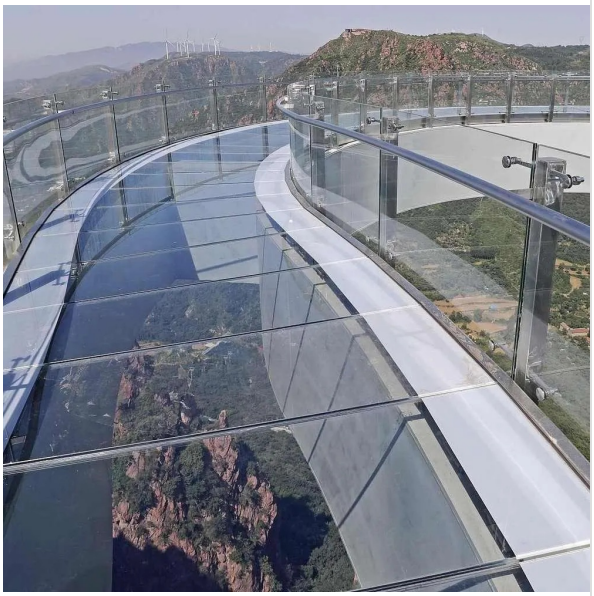
Value	Description	Photo Example
Bluestone	Bluestone is a sedimentary rock that's commonly used in landscaping and building projects	
Brass	Brass is an alloy of copper and zinc that is known for its low friction, durability, and workability. It's also resistant to corrosion and has antibacterial and anti-biofouling properties.	
Brick	A brick is a rectangular building block typically made from clay, sand, lime, or concrete, and used to construct walls, pavements, and other architectural elements. Bricks are hard, durable, and fire resistant.	
Bronze	Bronze is an alloy consisting primarily of copper, commonly with about 12–12.5% tin and often with the addition of other metals and sometimes non-metals.	

Value	Description	Photo Example
Cast Iron	Cast iron is a commercial alloy of iron, carbon, and silicon that is cast in a mold and is hard, brittle, nonmalleable, and incapable of being hammer-welded but more easily fusible than steel.	
Clay	Clay is a soft, fine-grained, earthy material and has a high plasticity index, which means it can undergo significant deformation without cracking, making it ideal for certain types of foundations. The load-bearing capacity of structures built on clay can be affected by changes in moisture content, leading to issues like settlement or heaving.	
Concrete	Concrete is a composite material composed of aggregate bonded together with a fluid cement that cures to a solid over time. A concrete bridge is a bridge built primarily from concrete, either reinforced or prestressed.	
Concrete Cast Insitu Prestressed	Prestressed concrete is a construction technique that uses tensioned steel wires, cables, or rods to introduce internal stresses into concrete. This counteracts the stresses caused by loads, allowing for longer spans, thinner structures, and material savings.	

Value	Description	Photo Example
Concrete Cast Insitu Reinforced	Reinforced concrete cast in situ is a concrete pouring technique where the concrete is poured into its permanent location. Reinforcing bars are assembled, then formwork is erected around them, and finally concrete is poured in.	
Concrete Precast Post-tensioned	Precast post-tensioned concrete is a construction method that uses post-tensioning to reinforce precast concrete. This is by done by applying tensile forces to concrete after it has been poured and cured. This process involves installing high-strength steel cables in ducts or sleeves next to the rebar, then tensioning the cables with hydraulic jacks. The cables are anchored at the ends of the concrete slab.	
Concrete Precast Pre and Post Tensioned		
Concrete Precast Pre-tensioned		
Concrete Precast Reinforced		
Concrete, Steel, and Polycarbonate		
Copper		

Value	Description	Photo Example
CPVC	CPVC, or chlorinated polyvinyl chloride, is a thermoplastic material that is used in many applications, including hot and cold water pipes, fire sprinkler pipes, and industrial liquid handling. CPVC is a strong, durable, and rigid plastic that is resistant to chemicals, corrosion, and high temperatures. It is also weatherproof and has high chlorine and biofilm resistance.	
Ductile Iron	Ductile iron is used in bridges in a variety of ways, including as pipes, piles, and excavation support. Ductile iron is a versatile material that is strong, tough, and hard, and is resistant to wind, storms, heat, rot, insects, and freezing weather.	
Durolite and Polycarbonate	Durolite is a premium grade glass fibre reinforced polyester sheet manufactured using advanced gel coat technology with an integral 100 micron thick gel coat on the top surface. It is guaranteed to transmit natural light for a period of 25 years while retaining material strength and load span capacity. Polycarbonate is used in security glazing—strengthening prisons, guard booths, bank teller shields, convenience stores, hurricane shutters, hockey rink surrounds and more.	
Earthenware		

Value	Description	Photo Example
Fibre Cement Board	Fiber cement boards are a versatile building material that are made from cement, cellulose fibers, and other additives. They are known for their strength, durability, and resistance to environmental conditions. Fibre cement boards can be used to replace traditional formwork in bridges, or on bridge decks to increase strength and durability.	
Fibre Reinforced Plastic (FRP)	FRPs are lightweight, durable, corrosion-resistant, and maintenance-free. They can be used for strengthening and repairing, as deck slabs and girders, or to strengthen substructure components.	
Fibreglass	Fiberglass, also known as fiber-reinforced polymer (FRP), is used in bridges because it is lightweight, strong, and durable. It is used for strength and corrosion resistance, and requires low maintenance, is easy to install, easily transported, and sustainable.	

Value	Description	Photo Example
Gabion	Gabions are another bridge pier scour protection method. They are wire mesh boxes filled with stone, rocks, or concrete. Construction of a retaining wall around bridge piers using gabion boxes provides resistance against scour. It will stabilise the soil layer around bridge piers by acting as a barricade.	
Geogrids	Geogrids are used to reinforce bridge abutments, bridge weak subgrade soils, and reduce the need for concrete. Geogrid distributes applied loads over a larger area, which leads to a high ductility of the structure.	
Geosynthetic	Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS) uses geosynthetic reinforcement and compacted granular fill to construct bridges that connect directly to the roadway without joints or bearings. The GRS-IBS is a cost-effective and faster construction method that can help eliminate the bump problem at the bridge approach.	
Geotextile		
Glass	Walk-on glass panels can be used to create a transparent bridge that spans large distances. The glass can be supported by steel or structural glass beams. Also, frameless glass balustrades can be integrated into the bridge construction.	

Value	Description	Photo Example
Granite	Granite is a commonly used material in bridge construction because it is durable, weather resistant, and can withstand heavy loads. Granite does not require waterproofing or bridge deck sealing, and is resistant to weathering in the long term.	
HDPE	High-density polyethylene (HDPE) is a thermoplastic material used in bridge construction. It can replace steel and concrete as bridge decking, it can protect steel tendons in post-tensioned bridges from corrosion, and can be used for building drainage systems.	
Iron		
Marble	Marble is often used for decorative purposes on bridges	
Masonry	Masonry is used in bridges to create the main loadbearing structures, which are typically arched and have massive supports.	
Metal		
Natural Void		
Originally Cast In-situ, Widened with Reinforced C		
Paver		
Plastic		
Plywood Panels with Steel Posts		
Polycarbonate		

Value	Description	Photo Example
Polyethylene (PE)		
Polypropylene		
Polyvinyl Chloride (PVC)		
Prestressed Concrete		
Recycled Plastic		
Reinforced Concrete		
Reinforced Concrete Cast Insitu		
Reinforced Concrete Pre-cast		
River Bed		
Rock/Stone		
Rope		
Rubber		
Sand Bags	Sandbags are often used in bridge projects, particularly when sheetpile cofferdams are not practical. Sandbags are a preferred method because they can be used in situations where bedrock prevents pile driving.	
Soil		
Stainless steel		
Steel - Galvanised		
Steel - Ungalvanised		
Steel/Concrete		
Steel/Glass		
Steel/Polycarbonate		
Steel/Wood		

Value	Description	Photo Example
Tile		
UPVC		
Wood	Timber bridges have	
Wood - Diagonal Planks		
Wood - Glue Laminated	Glued laminated timber (glulam) is a construction material made from wood laminations bonded together with adhesives. It's a strong, versatile, and innovative material that can be used for a variety of applications, from residential to commercial and industrial.	
Wood - Glue Laminated and LVL	Laminated Veneer Lumber (LVL) is a high-strength, engineered wood product made from thin layers of wood veneers that are bonded together under heat and pressure. LVL is used in construction for structural applications like beams, rafters, and joists.	
Wood - Longitudinal Planks		

Value	Description	Photo Example
Wood - Nail Laminated		
Wood - Transverse Planks		
Wood/Iron		
Wood/Plywood		
Rock/Geotextile		
Tyres	Tyre bales are made by compacting car tyres into a lightweight block and securing them with steel tie wires. They are cost-effective, easy to handle, and have a low density.	
Earth - Compacted	Compacted earth is a critical component of bridges, as it helps to create a stable foundation that distributes the bridge's weight evenly and reduces the risk of settlement.	
Earth - Reinforced	A construction material consisting of soil constructed with artificial reinforcing.	
Unknown		
Not Applicable		

[Supporting Note Header]

[Supporting Notes to further explain any exceptions or special situations or to help provide further clarity]