TRIO™ BOLLARD CONFIGURATIONS	Total Recycled Content	Post-Industrial Recycled Content	Post-Consumer Recycled Content	Light Output Above 90º
2 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent	73%	65%	8%	50%
2 F18BX 18 Watt Single Twin Tube 4-pin Fluorescent	73%	65%	8%	50%
1 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent	73%	65%	8%	50%

GREEN BUILDING STANDARDS

LEED®

This product can apply to the LEED credits outlined below. In order to provide knowledgeable assistance to our customers, we also have a LEED Accredited Professional on staff. If you don't see the information you need for your project on this page, you can contact our LEED AP by e-mailing green@forms-surfaces.com.

- **SS: Light Pollution Reduction** – Easily-shielded light fixtures can reduce light pollution and associated environmental impacts. Full light output profile is available on Product Data Sheets.
- **MR: Recycled Content** – This product contains recycled material. Recycled content information is shown above for all of our standard options. Custom product recycled content is available by advance request.
- **MR: Regional Materials** – We have manufacturing facilities in Pittsburgh, PA (15223), Carpinteria, CA (93013), Phoenix, AZ (84043), Santa Fe Springs, CA (90605) and Pune, India. Please contact us for more information.

LEED® India

This product can apply to one or more LEED India credits, as outlined below. If you don't see the information you need for your project on this page, you can contact us by e-mailing green@forms-surfaces.com.

- **SS: Light Pollution Reduction** – Easily-shielded light fixtures can reduce light pollution and associated environmental impacts. Full light output profile is available on Product Data Sheets.
- **MR: Recycled Content** – This product contains recycled material. Recycled content information is shown above for all of our standard options. Custom product recycled content is available by advance request.
- **MR: Local/Regional Materials** – We have manufacturing facilities in Pune, India. Please contact us for more information.

Green Globes™

This product can apply to one or more Green Globes credits, as outlined below. Our sustainability team is knowledgeable about the Green Globes standards, so please feel free to contact us at green@forms-surfaces.com should you need more information.

- **7.5.1 Exterior Light Pollution –** Low-energy lamping is an option for most of our light fixtures. Full light output profile is available on Product Data Sheets.
- **10.2.2.1 Recycled Content** – This product contains recycled material. Recycled content information is shown above for all of our standard options. Custom product recycled content is available by advance request.
- **10.2.4.1 Transportation of Manufactured Materials** – We have manufacturing facilities in Pittsburgh, PA (15223), Carpinteria, CA (93013), Phoenix, AZ (84043), Santa Fe Springs, CA (90605) and Pune, India. Please contact us for more information.

Estidama

This product can apply to the Estidama credits outlined below. We are familiar with the Estidama standards, so please feel free to contact us at green@forms-surfaces.com should you need additional information.

- **ADE3: External Lighting** – Low-energy lamping is an option for most of our light fixtures. Full light output profile is available on Product Data Sheets.
- **ADP6: Dark Sky Measures** – Easily shielded light fixtures can reduce light pollution and associated environmental impacts. Full light output profile is available on Product Data Sheets.
- **ADMAT1: Materials Specification - Major Building Elements – Recycled** – This product contains recycled material. Recycled content information is shown above for all of our standard options. Custom product recycled content is available by advance request.
- **ADMAT5: Sustainable Materials Sourcing** – Many of our products are manufactured with environmental sensitivity in mind. Contact us for more information.
- **ADWAS1: Reduction of Waste** – Most of our products are recyclable. Full disposal information is available below.

PRODUCT MATERIALS

Material	Type	Description	Mainte-nance (0-5)*	Inherent Value (0-5)**	Scratch Resistant	Corrosion/ Wear Resistant	Biodegradable	Rapidly Renewable	Recyclable
Aluminum	Cast	Solid aluminum cast in a mold to create a desired shape.	3	3		x			x
Aluminum	Extrusion	Simple or complex profiles created by forcing aluminum through a shaped die.	3	3		x			x
Aluminum	Sheet	Light weight and corrosion-resistant metal sheets suitable for roll-forming and other fabrication methods.	3	3		x			x
Polymer	Acrylic	Thermoplastic, petroleum-based polymer often used as a substitute for glass because of its high impact strength and clarity.	4	0		x			x
Stainless Steel	Sheet and Tube	Steel that is alloyed with chromium and other metals to improve corrosion-resistance. Formed by rolling or extruding.	3	4		x			x

*Maintenance ratings are assigned as follows: 0 – High level of maintenance required to keep up product performance and aesthetics; 5 – Absolutely no maintenance required to keep up product's visual appearance and performance characteristics;

**Inherent value ratings are assigned based on the material's scrap value: 0 – No scrap value, or negative scrap value, and/or no scrap market; 5 – High scrap value, accompanied by robust scrap market.

PROCESSES

F+S Facility Processes	Process Description	Vendor Facility Processes	Process Description
Adhesive Application	Used to bond non-metal components. Adhesives are applied either by hand or in a spray booth controlled for air emissions.	Aluminum Making	A two-step process by which the aluminum is first dissolved in a caustic bath and then precipitated out in crystals. This two-step process can be circumvented by using recycled scrap that is melted down to form new parts.
Brake Forming	A mechanical process in which material is shaped at a single angle along a straight axis. The process can be repeated to form more complicated shapes.	Extrusion	Process in which heated metal is pushed through a cross-sectional die to create a linear part with a specific shape.
Laser Cutting	A powerful, computer-controlled laser is used to precisely cut shapes or designs into metal.	Plastics Manufacture	Plastic is the common term for a wide range of synthetic or semi-synthetic organic solid materials used in industrial applications. Plastics are typically polymers of high molecular weight, and may contain other substances to improve performance or reduce costs.
Metal Punching	A mechanical process where a die tool creates a whole in the material using velocity and pressure. This is an efficient alternative to laser cutting or water jet cutting when patterns to be placed into the material are small and numerous.	Sand Blasting	The process of smoothing, shaping and cleaning a hard surface by forcing solid particles across that surface at high speeds to provide an even finish.
Powdercoating	A solvent-free finishing method in which electrically charged particles of pigmented resins are sprayed onto a product. Electrical grounding of the coated object causes the charged powder to adhere to the surface. When baked in a curing oven the deposited powder melts and fuses together to form a durable, cross-linked coating	Steel Making	Steel and stainless steel are made in one of two types of furnace: a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). A BOF is used to make steel from iron ore or from scrap steel; an EAF is used primarily to reprocess scrap steel.
Water Jet Cutting	A water jet cut utilizes water and a mixture of abrasives (garnet) at high pressure and velocity in order to carve/cut the material. Can be used to machine a large variety of materials, including heat sensitive or delicate materials. It produces no heat damage to the cutting area, and can yield a smooth edge finish when using the proper operating speed.	Vacuum Casting	A two-part mold is formed out of sand and plastic sheet held in place by vacuum. Molten metal is poured into the mold and allowed to cool. When the vacuum releases, the sand falls away and the part is left.
Welding	A process that joins two similar metals by causing coalescence. Usually accomplished by melting the work pieces and adding a filler material to form a pool of molten metal that cools to become a strong joint.		

PACKAGING MATERIALS

Material	Type	Description	Disposal
Cardboard	Box	Small or light products are packaged in cardboard boxes. We often reuse boxes for shipping.	Recycle
Cardboard	Shredded	Shredded cardboard is made onsite from incoming cardboard boxes and padding. The shredded cardboard is used to package outgoing shipments.	Recycle
Plastic	Wrap	Plastic wrap is used to protect the finish on products and also to hold padding to products. Clean plastic wrap is recyclable.	Recycle
Wood	Crate	Wood crates are made to fit onsite. Wood scraps are recycled into mulch. Crates are reused when possible.	Recycle/Reuse

TRANSPORT

Method	Type	Description
Boat	Overseas	Some product components are shipped by cargo ship from overseas.
Ground	Truck/Rail	Some incoming shipments and almost all outgoing shipments to customers are sent via ground transportation. This can include truck and often rail transport depending on the final destination.

MAINTENANCE & USE

Maintenance or Use	Description	Chemicals Required
Clean with Water and Mild Cleaner	This product requires a damp cloth and a mild, nontoxic cleaner for maintenance.	Mild, water-based cleaner
Electricity - Fluorescent	Product is available with fluorescent lamping.	NA

DISPOSAL

Method	Description
Disassemble	Product can be disassembled to separate recyclable components.
Recyclable - Partially	Some of the product components are recyclable.
Recycling - Scrap	Materials can be sold for scrap.

SUMMARY

Category Type	Property/Component	2 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent	2 F18BX 18 Watt Single Twin Tube 4-pin Fluorescent	1 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent
Basic	Total Recycled Content	73%	73%	73%
Basic	Post-Industrial Recycled Content	65%	65%	65%
Basic	Post-Consumer Recycled Content	8%	8%	8%
Basic	Light Output Above 90deg	50%	50%	50%
LEED	SS: Light Pollution Reduction	x	x	x
LEED	MR: Recycled Content	x	x	x
LEED	MR: Regional Materials	x	x	x
LEED India	SS: Light Pollution Reduction	x	x	x
LEED India	MR: Recycled Content	x	x	x
LEED India	MR: Local/Regional Materials	x	x	x
Green Globes	7.5.1 Exterior Light Pollution	x	x	x
Green Globes	10.2.2.1 Recycled Content	x	x	x
Green Globes	10.2.4.1 Transport of Manufactured Matls	x	x	x
Estidama	ADE3: External Lighting	x		x
Estidama	ADP6: Dark Sky Measures	x	x	x
Estidama	ADMAT1: Matls Spec – Recycled	x	x	x
Estidama	ADMAT5: Sustainable Matls Sourcing	x	x	x
Estidama	ADWAS1: Reduction of Waste	x	x	x
Materials	Al – Cast	x	x	x
Materials	Al – Extrusion	x	x	x
Materials	Al – Sheet	x	x	x
Materials	Polymer – Acrylic	x	x	x
Materials	SST – Sheet and Tube	x	x	x
Processes	Adhesive Application	x	x	x
Processes	Aluminum Making	x	x	x
Processes	Brake Forming	x	x	x
Processes	Extrusion	x	x	x
Processes	Laser Cutting	x	x	x
Processes	Metal Punching	x	x	x
Processes	Plastics Manufacture	x	x	x
Processes	Powdercoating	x	x	x
Processes	Sand Blasting	x	x	x
Processes	Steel Making	x	x	x
Processes	Vacuum Casting	x	x	x
Processes	Water Jet Cutting	x	x	x
Processes	Welding	x	x	x

SUMMARY continued

Category Type	Property/Component	2 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent	2 F18BX 18 Watt Single Twin Tube 4-pin Fluorescent	1 F24BX 24 Watt Single Twin Tube 4-pin Fluorescent
Packaging	Cardboard – Box	x	x	x
Packaging	Cardboard – Shredded	x	x	x
Packaging	Plastic – Wrap	x	x	x
Packaging	Wood – Crate	x	x	x
Transport	Boat – Overseas	x	x	x
Transport	Ground – Truck/Rail	x	x	x
Maintenance & Use	Clean with Water and Mild Cleaner	x	x	x
Maintenance & Use	Electricity – Fluorescent	x	x	x
Disposal	Disassemble	x	x	x
Disposal	Recyclable – Partially	x	x	x
Disposal	Recycling – Scrap	x	x	x

Forms+Surfaces is dedicated to environmental responsibility. We maintain an Environmental Management System and are continually working to improve our impact through efficiency, material selection, vendor education, employee involvement, and an unwavering commitment to being exemplary corporate citizens. If you would like additional information on our Environmental Management System or our company environmental initiatives and policies, please feel free to contact our Sustainability Team at green@forms-surfaces.com.