BLUE DIAMOND
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Choosing the Right Conduit for Federal Infrastructure Grants

Matching Infrastructure Goals to Federal Funding Requirements—Navigating the complexities of the BEAD Program, USDA ReConnect, and the Inflation Reduction Act requires more than just high-quality materials—it requires strategic alignment with federal mandates.

The following matrix is designed to help Project Managers, Grant Writers, and Engineers quickly identify the BABA-compliant HDPE solutions that meet the specific technical and regulatory benchmarks of major US infrastructure grants. Use this guide to ensure your submittals are audit-ready and your project is positioned for approval.

Grant-Ready Product Selection Matrix

Infrastructure Project Type	Primary Grant Programs (e.g., BEAD, ReConnect)	Recommended BDI Solution	Key Compliance Feature
Middle-Mile Fiber Backbone	**BEAD**, Enabling Middle Mile Broadband	**3N1® Boreable Conduit**	Anti-spiraling design for long-distance river/ highway bores.
Last-Mile FTTH (Fiber to the Home)	**ReConnect**, Digital Equity Act	**Microduct & FutureWay™**	Scalable, high-density fiber paths for residential rollouts.
Grid Modernization / Storm Hardening	**GRIP** (Grid Resilience Innovation Partnerships)	**Cable-in-Conduit (CIC)**	Rapid undergrounding of power lines to reduce storm outages.
Interstate & Highway Lighting/ITS	**NEVI** (EV Charging), **INFRA** Grants	**UL Listed HDPE (Sch. 40/80)**	NEC compliant & DOT approved for traffic/ safety systems.
Renewable Energy Field Collector Lines	**IRA** (Inflation Reduction Act) Tax Credits	**Smoothwall HDPE (Power)**	High thermal stability for utility-scale solar/ wind collector sets.
Airport & Runway Infrastructure	**AIG** (Airport Infrastructure Grants)	**FAA-Spec Cable-in-Conduit**	Specialized protection for mission-critical runway lighting.

Beyond the Matrix: Custom Submittals for Your Bid

While this guide provides a roadmap for common applications, we know that every federally funded project has unique geographical and technical hurdles. Whether you are navigating a difficult river bore for a Middle-Mile project or calculating the thermal stability needed for a Utility-Scale Solar farm, BDI's engineering team is here to assist.

Don't leave your compliance to chance. Our experts can provide project-specific **Manufacturer's Certifications of Origin**, detailed **SDR pressure ratings**, and **customized submittal packages** that speak directly to the requirements of your specific grant application.

Need a Project-Specific Compliance Certification? Put the BDI advantage into your next bid.
Speak with our Federal Infrastructure Specialist today to get the exact documentation your grant auditor requires.

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BABA Act
Build America Buy America Act

BABA & Build America Compliance: Frequently Asked Questions

This FAQ sheet is a critical technical supplement to your cover letter. It addresses the "deep" compliance questions that federal auditors and legal teams ask during the vetting process for BEAD or USDA ReConnect funding.

1. Does BDI meet the "Infrastructure Investment and Jobs Act" (IIJA) domestic content requirements?

Yes. Under the IIJA and the Build America, Buy America (BABA) Act, "Plastic and polymer-based products" are classified as construction materials. BDI certifies that all manufacturing processes for our HDPE conduit—from the initial mixing of resins to the final extrusion and reeling—occur entirely within our U.S.-based facilities.

2. What is the "Substantial Transformation" rule, and how does BDI comply?

"Substantial transformation" is a legal standard used to determine the country of origin. BDI complies by taking raw HDPE resin pellets and undergoing a complex, high-heat extrusion process that fundamentally changes the physical form and utility of the material into a finished conduit. This entire "transformation" takes place at our plants in Kentucky, Texas, South Carolina, or Utah.

3. Does BDI use 100% domestic raw materials (Resin)?

BABA requirements for construction materials currently focus on the manufacturing location of the finished product. However, BDI prioritizes domestic resin suppliers to ensure supply chain stability and compliance with even the strictest federal interpretations. We maintain detailed records of our material sourcing to assist partners with specific audit requirements.

4. Are BDI products compliant with "Section 70914" of the BABA Act?

Yes. Section 70914 requires that none of the funds made available for a Federal financial assistance program for infrastructure may be obligated for a project unless all the iron, steel, manufactured products, and construction materials used in the project are produced in the United States. BDI conduit falls under the "construction materials" category and meets the 100% U.S. produced standard.

5. Can BDI provide a "Manufacturer's Certification of Origin" for specific projects?

Yes. For contractors and agencies managing federal grants, BDI can provide project-specific certifications. These documents link your specific Purchase Order (PO) to our domestic manufacturing batch records, providing an airtight "paper trail" for federal auditors.

6. How does BDI support "BABA Waivers"?

Because BDI has a robust domestic manufacturing capacity and regionalized distribution, we typically help our customers avoid the need for waivers. Using BDI products eliminates the administrative delay and risk associated with applying for non-availability waivers, keeping your project timeline on track.

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Build America, Buy America (BABA) Act Commitment

Subject: Certification of Domestic Origin and Compliance with the Build America, Buy America (BABA) Act
To: Project Engineers, Grant Administrators, and Procurement Officers

As the United States embarks on historic investments in our national infrastructure through the **Infrastructure Investment and Jobs Act** (IIJA), the **BEAD Program**, and **USDA ReConnect** grants, **Blue Diamond Industries** (BDI) stands ready as your committed domestic partner.

We officially certify that Blue Diamond Industries' High-Density Polyethylene (HDPE) conduit products are **100% Manufactured in the United States**. Our manufacturing processes and raw material sourcing are designed to meet and exceed the rigorous "Domestic Content" requirements set forth in the **Build America, Buy America (BABA) Act** and the **Rural Utilities Service (RUS)** standards.

Our Domestic Footprint

Unlike "assemblers" who rely on imported components, BDI operates a robust American manufacturing network with strategically located facilities in:

- Lexington & Middlesboro, Kentucky
- Aubrey, Texas
- Clinton, South Carolina
- Ogden, Utah

This regionalized production not only ensures compliance with federal mandates but also provides our partners with **reduced lead times, lower shipping costs, and a minimized carbon footprint** for nationwide infrastructure deployment.

Our Commitment to Your Success

We recognize that the administrative burden of grant compliance is significant. To support your application and audit requirements, BDI provides:

- Direct Traceability: Clear documentation of manufacturing origin for every reel delivered to the job site.
- Regulatory Alignment: Products engineered to ASTM, NEMA, and UL standards, ensuring technical approval follows legal compliance.
- Stability & Experience: As a member of the Hexatronic Group, we combine global innovation with a fierce commitment to the American worker and the communities in which we operate.

By specifying Blue Diamond Industries, you are choosing a partner that guarantees your infrastructure is **Built in America, by Americans, for America's future.**

Should you require specific site certifications or additional technical submittals for your grant application, please contact our Compliance Team at info@bdiky.com or 859-224-0415.

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Technical Guide: NEC Compliance for HDPE Conduit

Overview

Blue Diamond Industries (BDI) manufactures High-Density Polyethylene (HDPE) conduit that is fully compliant with the **National Electrical Code** (NEC). When properly installed, BDI conduit provides a durable, moisture-resistant, and corrosion-proof raceway for electrical conductors.

1. Primary Code Reference: Article 353

The NEC recognizes HDPE conduit under Article 353. BDI UL-Listed conduit meets all requirements for use as a non-metallic raceway that is circular in cross-section and resistant to moisture and chemical agents.

- **Approved Uses (Article 353.10):**
  - **Direct Burial:** BDI conduit is approved for direct burial in earth without concrete encasement.
  - **Corrosive Environments:** Excellent for use in areas subject to severe corrosive influences as described in Article 300.6.
  - **Cinders:** Approved for installation in cinder fill.
  - **Wet Locations:** Naturally impervious to moisture, making it ideal for wet locations and preventing "water trees" in power cables.
- **Installation Method:** Ideal for Horizontal Directional Drilling (HDD) to minimize surface disruption (Article 353.10(6)).

2. Cable-in-Conduit (CIC): Article 354

BDI's factory-installed Cable-in-Conduit is governed by **Article 354**, "Nonmetallic Underground Conduit with Conductors."

- **Standard Compliance:** BDI CIC is listed to **UL 1990,** meeting the NEC requirement that the assembly of conductors and conduit be factory-manufactured.
- **Application:** Approved for direct burial and for use in continuous lengths to eliminate underground splicing.

3. Support and Anchoring (Article 353.30)

While HDPE is primarily an underground solution, the NEC provides specific guidance on its transition:

- **Bores and Trenches:** Continuous runs of BDI HDPE do not require intermediate support when installed underground or within a bore.
- **Transitions:** When transitioning to above-ground systems, BDI recommends transitioning to rigid metal conduit (RMC) or PVC as per local code requirements for exposed locations.

4. Bends and Elbows (Article 353.24 & 353.26)

- **Number of Bends:** In accordance with Article 353.26, there shall not be more than the equivalent of four quarter bends (360° total) between pull points (e.g., conduit bodies and boxes).
- **Bending Radius:** BDI HDPE is flexible, but it must be installed according to the minimum bending radius to prevent damage to the duct or the conductors inside. (Refer to BDI Technical Data Sheets for specific radius calculations per diameter).

5. Grounding and Bonding

As a nonmetallic raceway, BDI conduit does not require grounding. However, an equipment grounding conductor (EGC) must be pulled within the conduit to ground equipment at both ends of the run, as per **Article 250**.

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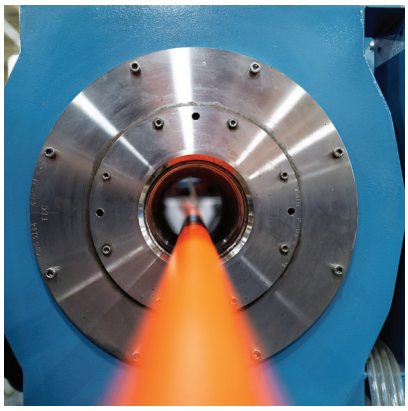
Cost-Benefit Analysis: BDI Factory-Installed Cable-in-Conduit (CIC) vs. Traditional Field Pulling

Feature / Metric	Traditional Field Pulling	BDI Factory-Installed CIC	The "BDI Advantage"
Labor Requirement	**High**. Requires separate crews for conduit installation and cable pulling.	**Low.** One crew installs conduit and cable simultaneously in a single pass.	**Save 40-60% on labor costs.**
Project Timeline	**Extended**. Two-step process (Trench/Bore ⇨ Pull Cable).	Accelerated. One-step process. Install and move to the next site.	**Reduce total project time by up to 50%.**
Equipment Costs	**Heavy**. Requires pulling tuggers, specialized lubes, and tension monitors.	**Minimal**. Standard trenching, plowing, or HDD equipment only.	**Lower capital expenditure per job site.**
Cable Integrity	**Risk of Damage.** Potential for scraping, stretching, or debris contamination.	**Factory-Protected.** Cable is sealed and protected in a controlled environment.	**Minimize "re-work" and cable failure claims.**
Weather/Site Risks	**High**. Mud, rain, and frozen ground can stall cable pulls for days.	**All-Weather.** If you can trench or bore, the cable is installed. No delays.	**Keep your schedule on track regardless of conditions.**
Lubrication	**Messy/Inconsistent.** Manual field application is often uneven.	**Precision.** Factory-applied lubrication ensures optimal low friction.	**Better long-term cable performance.**
Total Installed Cost	**Higher.** Hidden costs in labor, time, and equipment rentals.	**Lower.** Higher material value, but significantly lower labor/time costs.	**Higher Profit Margin for the Contractor.**



Stop Paying Twice for the Same Trench

Why pay a crew to dig a hole and then pay them again a week later to pull cable through it? With Blue Diamond's Cable-in-Conduit (CIC), the trench is opened and closed with the cable already safely inside.

Eliminate the 'Pulling' Variable

Field pulling is where most cable damage happens—stretching, scraping, or getting stuck. Our factory-controlled process removes that risk entirely, ensuring your 5G or Power assets are pristine upon delivery.

Beat the Weather

We've all seen projects stall because a site got too muddy to set up pulling equipment. If your machines can move dirt, Blue Diamond's Cable-in-Conduit (CIC) can be installed. Don't let a rainstorm eat your profit margin.

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BDI Technical Bulletin: #2026-01
Understanding Compliance: NEMA TC7 vs. UL 651A for Power Applications

Introduction

In the complex landscape of electrical infrastructure, specifying the correct HDPE conduit is critical for both safety and code compliance. While **NEMA TC7** and **UL 651A** are often discussed interchangeably, they serve different roles in a project's lifecycle. This bulletin clarifies those differences to ensure your project meets National Electrical Code (NEC) requirements without compromising on physical performance.

The Fundamental Difference

NEMA TC7 is an **industry performance standard**. It ensures that the conduit is manufactured consistently and will perform as expected in the field.

UL 651A is a **safety listing**. It is a third-party certification that verifies the product meets the safety mandates of the **National Electrical Code (NEC) Article 353.**

Comparison Matrix

Feature	NEMA TC7	UL 651A
Certification	Manufacturer Self-Certified	Independent Third-Party Audited
NEC Article 353	General Guidelines	Required for "listed" Installations
Audit Frequency	Periodic Internal Review	Continuous, Unannounced Site Audits
Wall Specifications	Broad (includes SDR 11)	Specific (Sch 40, Sch 80, SDR 13.5)
Resin Control	F2160 Standards	UL "Fingerprinted" Verified Resins

Engineering Alert: The SDR 11 vs. UL Gap

A common point of confusion occurs when an engineer specifies SDR 11 for a UL-Listed project. UL does not currently recognize SDR 11. The BDI Solution: * For 3/4" to 4" diameters: Specify UL EPEC-80 (Schedule 80). It provides a wall thickness comparable to SDR 11 while maintaining the required UL Listing.

- **For 4" and above:** Use SDR 13.5 (EPEC-B), the heaviest wall available under UL 651A.

When public safety and code inspections are on the line, UL 651A is the non-negotiable standard. Blue Diamond Industries is a certified UL manufacturer, providing the "Listed" products your project requires with the regional availability you need.

Contact Info of Regional Manufacturing Plants:
Phone: 859-224-0415 **Email:** info@bdiky.com

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