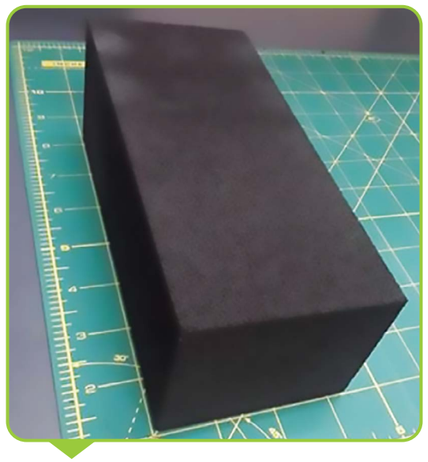
PRODUCTION OF BUILDING PRODUCTS FROM COAL AND COAL WASTE BEGINS IN WEST VIRGINIA

Coal-derived building materials will create jobs in Appalachian coal communities.

X-MAT BEGINS SMALL-SCALE PRODUCTION AND TESTING

X-MAT, an NETL Carbon Ore Processing Program recipient, began small-scale production and testing of **Coal-Derived Building Materials (CDBM)** at a new facility in Bluefield, West Virginia. The technology uses proprietary ceramic forming resin to **encapsulate coal and coal-waste particles into composite materials for application in building products** such as roofing tiles and siding.



Sample of Full-Size X-BRIX - Coal-Derived Building Block of the Future, Licensed from Partner, Semplastics

Set of 10 Coal-Based Ceramic Roof Tiles (Containing 70% Coal) Developed by Semplastics

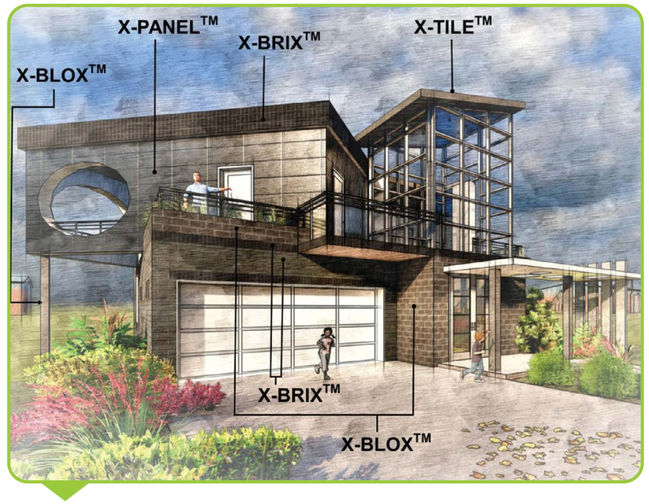
The X-MAT CDBM exhibits high-performance characteristics, including **high strength** (five times the flexural strength of the best commercial brick, and more than twice the compressive strength of construction-grade concrete block), **lower density**, improved mechanical durability and **abrasion resistance**, very high temperature stability, **and resistance to chemicals**, **acids**, **salts**, **and water**.

COAL-DERIVED MATERIALS REDUCE BUILDING COSTS AND PERMANENTLY STORE CARBON

X-MAT has reduced the cost of CDBM by decreasing the temperature required to activate a ceramic forming resin. The process utilizes low-cost carbon in coal and coal wastes and allows the carbon to be locked away permanently.

DESIGNING MANUFACTURED HOMES FROM COAL-BASED BUILDING MATERIALS

X-MAT is exploring applications of CDBM for higher-performance modular construction by developing a conceptual design of a CDBM-based dwelling structure and establishing and testing fastening methodologies for these building materials.



Artist's Conception of Dwelling Built Using Coal-Derived Materials (Proof-of-Concept Design)

PARTNERS

X-MAT Reimagining high performance materials

Semplastics

AWARD NUMBER
DE-FE0031985

PROJECT BUDGET

FY21 FUNDING

$624K

- DOE $498,442
- PERFORMER..... $126,000

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FECM RDD&D PRIORITY

ADVANCE CRITICAL MINERALS, RARE EARTH ELEMENTS (REE), AND MINE REMEDIATION

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