

HIGH-RESISTANCE FERRO-SIALATE GEOPOLYMER PRODUCED WITH CALCINED TAILINGS SLURRY FROM BRUMADINHO

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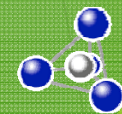
R. Prof. Henrique Neves Lefevre 785 - São Paulo, Brazil



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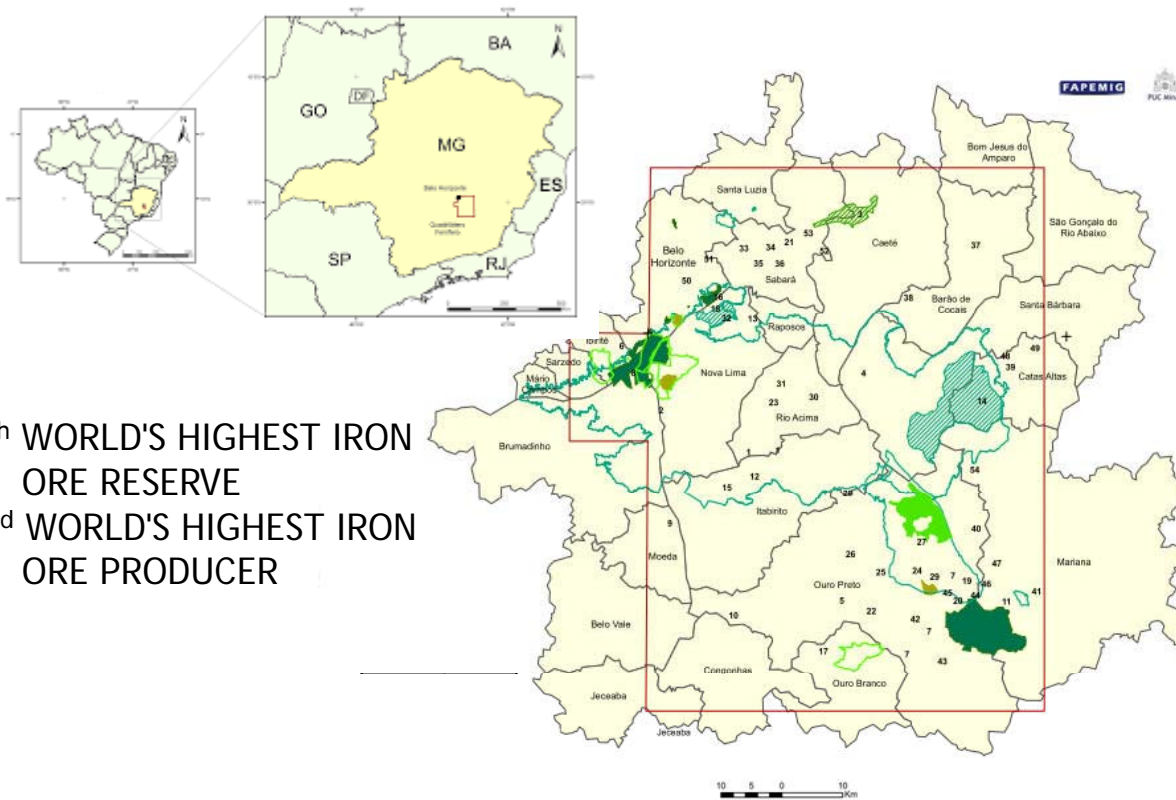
Geo-Pol[®]
Geopolymer System



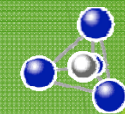
GEOPOLYMER CAMP



BRAZILIAN FERRIFEROUS QUADRILATERAL



- 5th WORLD'S HIGHEST IRON ORE RESERVE
- 2nd WORLD'S HIGHEST IRON ORE PRODUCER

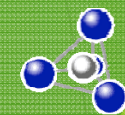




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OURO PRETO (MINAS GERAIS, BRAZIL)



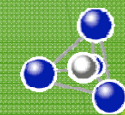
GEOPOLYMERCAMP



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MARIANA (MINAS GERAIS, BRAZIL)



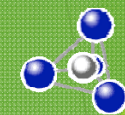
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BRUMADINHO'S TSUNAMI OF IRON ORE TAILINGS



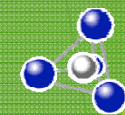
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BRUMADINHO'S TSUNAMI OF IRON ORE TAILINGS



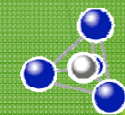
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MIXING RAW MATERIALS



GEOPOLYMER CAMP

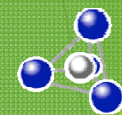


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CRITERIA FOR THE DEVELOPMENT OF A TAILINGS SLURRY-BASED GEOPOLIMERIC MATERIAL

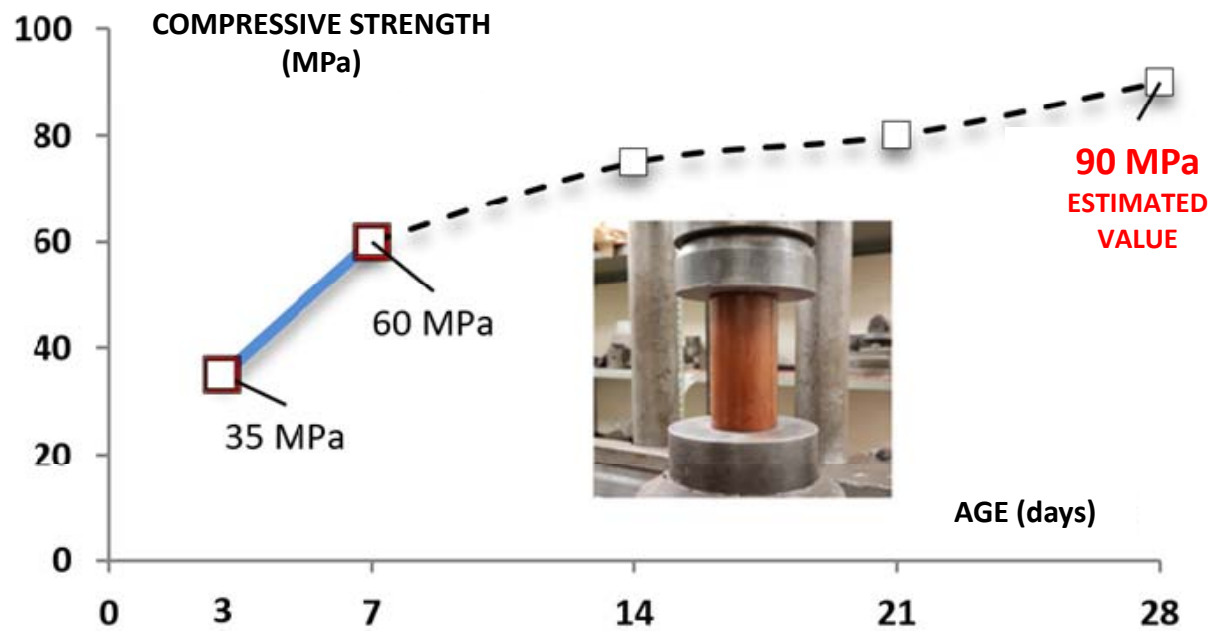
- USE OF MAXIMUM QUANTITY OF TAILINGS SLURRY;
- LOW COST SUSTAINABLE RAW MATERIALS;
- HIGH COMPRESSIVE STRENGTH;
- WORKABILITY;
- USER-FRIENDLY ALKALINE-REAGENT.



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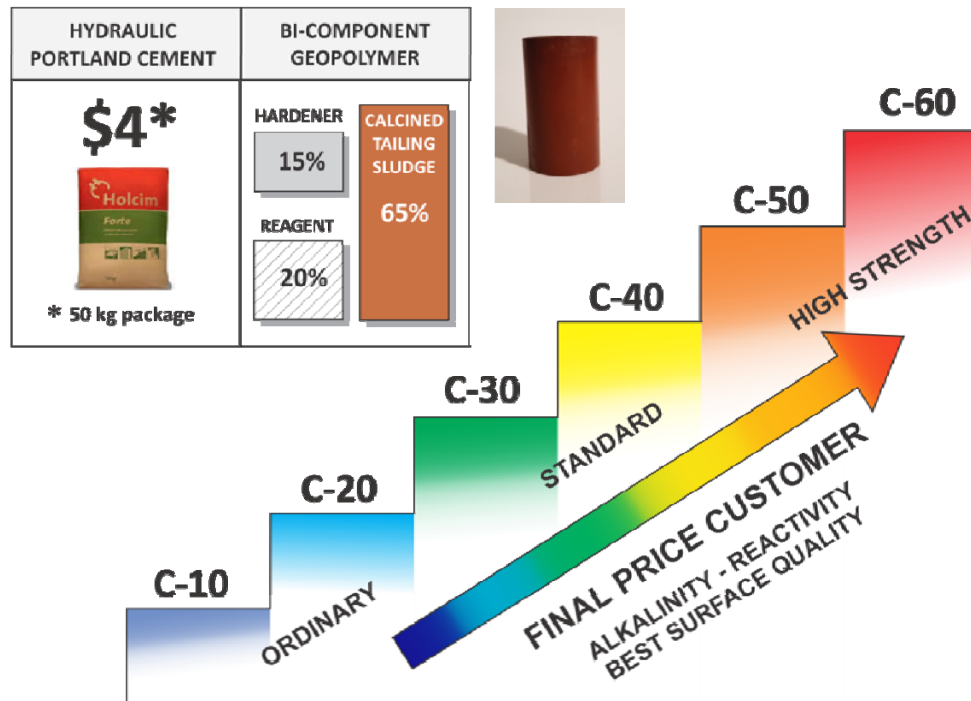
COMPRESSIVE STRENGTH OF CYLINDRICAL TEST SPECIMENS





FINAL PRICE ESTIMATING OF THE PRODUCT FOR LARGE-SCALE PRODUCTION

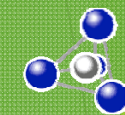
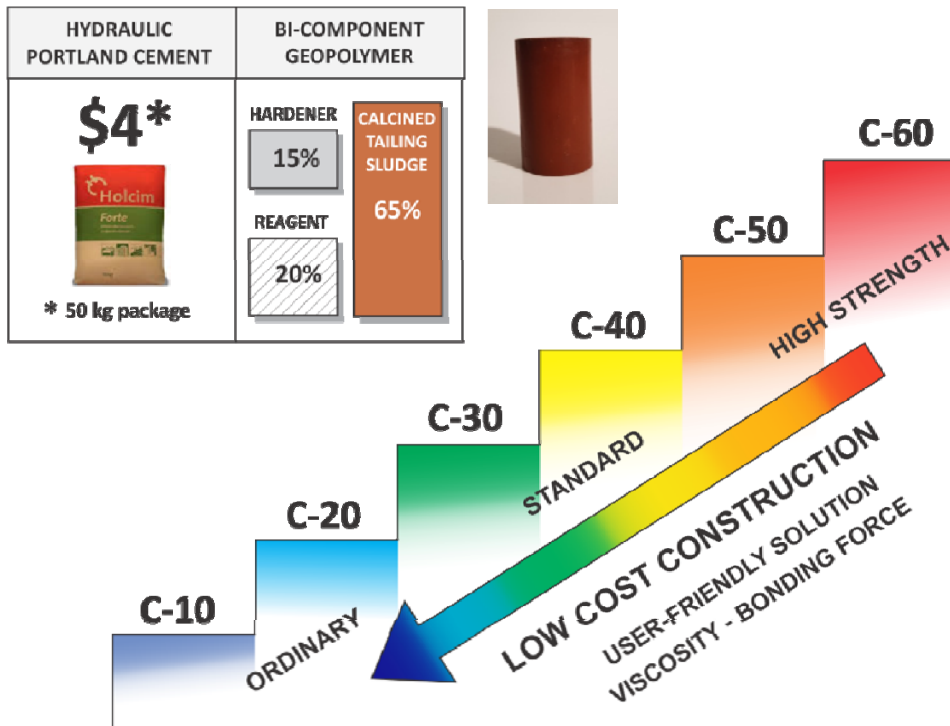
LARGE-SCALE PRODUCTION





FINAL PRICE ESTIMATING OF THE PRODUCT FOR LARGE-SCALE PRODUCTION

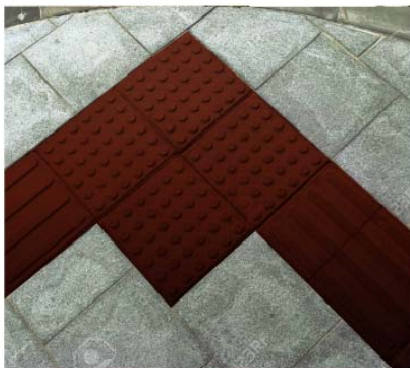
LARGE-SCALE PRODUCTION



SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

C-10

ARTESIAN WELLS RINGS
BIKE PATHS
CERAMIC TILES AND BRICKS
INTERLOCKING PAVEMENT
STRUCTURAL BRICKS
TATIL FLOOR
URBAN FURNITURE

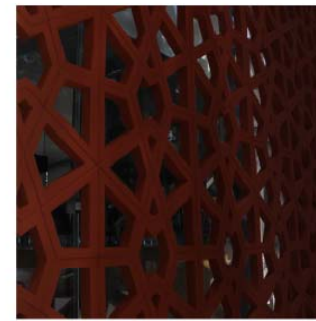
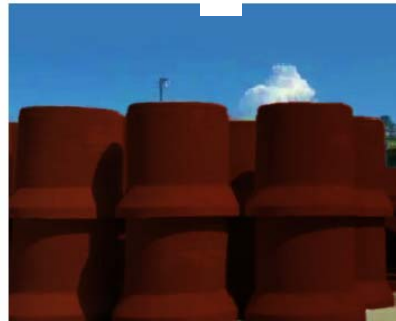


MERELY ILLUSTRATIVE IMAGES

SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

C-20

ARCHITECTURAL FAÇADES
CURBS AND GUTTERS
NEW JERSEY BARRIERS
PLUVIAL DRAINAGE CULVERTS
PREFABRICATED SEWER TUBES



MERELY ILLUSTRATIVE IMAGES



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SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

C-30

BEAMS AND SLABS
CENTRIFUGED HOLLOW POLES
CONTAINING STRUCTURES
FOUNDATION BLOCKS
STRUCTURAL FOOTINGS



MERELY ILLUSTRATIVE IMAGES

SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

C-40

PREFABRICATED PILES
BUILDINGS COLUMNS
INDUSTRIALS FLOORS



MERELY ILLUSTRATIVE IMAGES

SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

C-50

INDUSTRIAL RESIDUES CULVERTS
MARITIME AND PORT WORKS
TUNNELLING CULVERTS



MERELY ILLUSTRATIVE IMAGES

SOME PRACTICAL APPLICATIONS OF FERRO-SIALATE GEOPOLYMER MATERIAL BY RESISTANCE CLASS

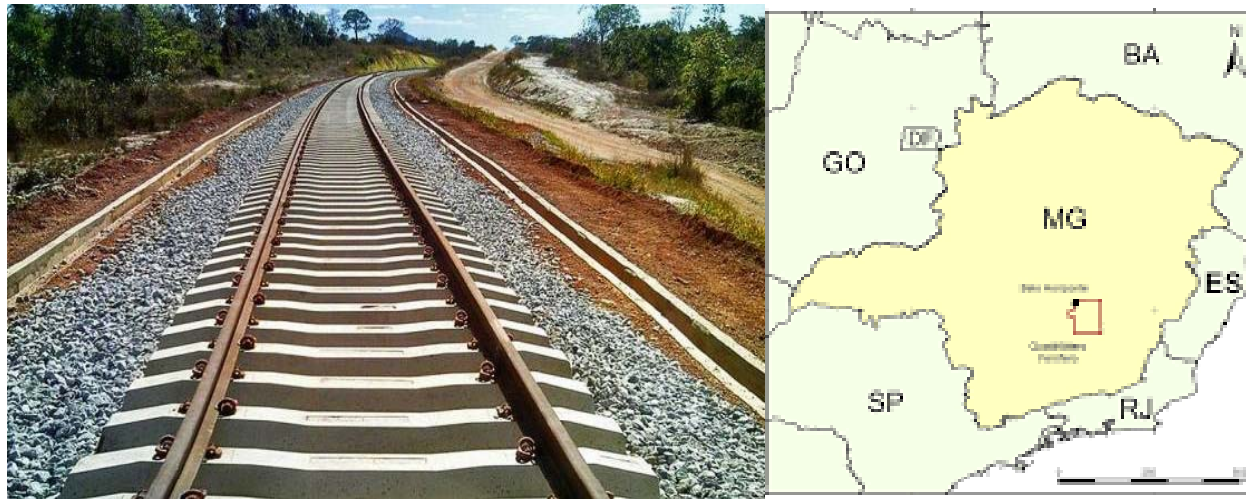
C-60

OFF-SHORE STRUCTURES
PRESTRESSED FLAT SLABS
PRESTRESSED SLEEPERS



MERELY ILLUSTRATIVE IMAGES

NEW BRAZILIAN PROGRAM OF RAILROAD CONCESSION



GOVERNMENT PROPOSAL (JANUARY 09, 2019)

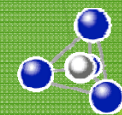
**DUPLICATE THE RAIL NETWORK
IN SEVEN YEARS**



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**THANK YOU FOR YOUR
ATTENTION !**



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