RECENT DEVELOPMENTS IN REFRACTORY MATERIALS FOR THE GLASS CONDITIONING PROCESS
INTRODUCTION

• **FUSIONTEC IS A NEW COMPANY** born mainly to integrate the Revimac activity in the field of forehearth system supply.

• **ON THE WAVE OF MORE THAN 100 WORKING ENDS AND FOREHEARThS SUPPLIED AND INSTALLED AROUND THE WORLD,** Revimac management decided to get **100 PERCENT CONTROL OVER THE GLASS CONDITIONING PROCESS** adding the internal production of refractory materials to its established combustion and control system based on proprietary design.

• **TO AVOID QUESTIONS ABOUT ‘‘A NEW COMPANY IN THE MARKET’’,** Fusiontec decided to acquire the **SOLID KNOW-HOW OF TARKUS REFRACTORIES SRL** to have a smooth start based on a wealth of experience in the production of refractory materials.

• **BEING A NEWCOMER, FUSIONTEC IS TREASURING ON THE TARKUS TECHNOLOGY ON ONE SIDE,** **INTRODUCING HOWEVER A FRESH APPROACH** to the conventional method of manufacturing the refractories deriving from the long experience of its mother company (Revimac) in the field of mechatronic engineering.
PRODUCTION PROGRAM

SELECTED REFRACTORY MATERIALS FOR:

- WORKING-END (DISTRIBUTORS) & FOREHEARTHS
- FEEDER EXPENDABLES
- MELTING FURNACES
- W-E & FOREHEARTHS COMBUSTION SYSTEMS
- W-E & FOREHEARTHS CONTROL SYSTEMS
- COLOURING FOREHEARTHS
- STIRRER MECHANISMS
GLOBAL PLAYER

WITH UP TO 1500 WE AND FTH SUPERSTRUCTURES, UP TO 900 WE AND FTH GLASS CONTACT CHANNEL AND MORE THAN 200 FURNACE BOTTOM PAVING SUPPLIED AND INSTALLED, TARKUS REFRACTORIES SRL USED TO BE A MAJOR PLAYER IN THE WORLD MARKET.

FUSIONTEC IS GOING TO BE A FULL TITLE SUCCESSOR IN THIS RESPECT.
STATE OF THE ART ENGINEERING

CASE STUDY

SIMULATION “A”

SIMULATION “B”
STATE OF THE ART ENGINEERING

DIRECT COOLING

INDIRECT COOLING

COMBINED COOLING
STATE OF THE ART ENGINEERING

• EVALUATION OF STRUCTURE BY FEM COMPUTER SYSTEM
STATE OF THE ART ENGINEERING

3D DESIGN
FOR ALL APPLICATIONS
STATE OF THE ART ENGINEERING
REFRACTORY PRODUCTION PLANT EQUIPMENT

• SEMI-AUTOMATIC PRE-MIX UNIT
• 2 AUTOMATIC MIXING MACHINES
• 8 SEMI-AUTOMATIC PRODUCTION STATION
• 5 HIGH TEMPERATURE FIRING FURNACES
• CNC GRINDING AND CUTTING MACHINES
• AUTOMATIC PACKING SYSTEM
• INTERNAL LABORATORY FOR ROUTINE QUALITY CONTROL
• EXTERNAL LABORATORY CONTRACTED FOR QUALITY CERTIFICATION
QUALITY...OUR MISSION

COMPUTER ASSISTANCE AT THE HEART OF IT

• BAR CODE FROM RAW MATERIALS ENTRY TO FINISHED PRODUCTS SHIPMENT.
• TRACEABILITY IN ALL STAGES OF MANUFACTURING PROCESS.
• COMPUTER ASSISTED PATTERN DESIGN:
  THE WOODEN PATTERNS OF THE BLOCKS ARE BASED ON 3-D OPTIMIZED DESIGN AND IMMEDIATELY MANUFACTURED IN THE INTERNAL WORKSHOP EQUIPPED WITH MODERN WOOD-WORKING EQUIPMENT. THIS IS AN ESSENTIAL ASSET WHEN THE MARKET IS DEMANDING FLEXIBILITY TO MANUFACTURE SPECIAL SHAPE AND EXTRA LARGE SIZE STRUCTURAL ELEMENTS.
• COMPUTER ASSISTANCE IN FIRING FURNACES:
  FUSIONTEC IS EVENTUALLY GOING TO OPERATE ON FIVE HIGH TEMPERATURE FIRING KILNS, WHOSE CONSTRUCTION DESIGN IS MOSTLY HOME-MADE. THE SAME APPLIES TO THE CONTROL SYSTEM, BASED ON SELF-DEVELOPED SOFTWARE, THAT BESIDES GUARANTEEING THE UTMOST VERSATILITY CAN AS WELL BE COMFORTABLY MONITORED 24 HOURS/DAY SIMPLY LOOKING AT THE DEDICATED “APP” MADE AVAILABLE ON THE SMART-PHONES OF THE SUPERVISORS.
• COMPUTER ASSISTED CNC MULTI-AXIS REFRACTORY GRINDING AND CUTTING MACHINES.
COMPUTER ASSISTANCE IN PATTERN DESIGN
COMPUTER ASSISTANCE IN PRODUCTION

- EXCELLENT MATERIAL DISTRIBUTION AFTER FORMING
- CAPABILITY OF CASTING EXTRA LARGE AND ODD SHAPES
COMPUTER ASSISTANCE IN FIRING PROCESS

- HIGH FIRING TEMPERATURE
- TEMPERATURE STABILITY
- TEMPERATURE HOMOGENEITY
- CAPABILITY TO FIRE EXTRA LARGE BLOCKS
- REDUCED OR OXIDIZED COMBUSTION
- REMOTE CONTROL
COMPUTER ASSISTANCE IN GRINDING PROCESS

- FULLY AUTOMATIC MACHINES
- LASER CONTROL
- HIGH GRADE DETAIL
- OUTSTANDING SURFACE FINISH
- GREAT DIMENSIONAL ACCURACY
COMPUTER ASSISTANCE IN GRINDING PROCESS

FUSIONTEC GLASSMAN 2017 BUENOS AIRES
COMPUTER ASSISTANCE IN GRINDING PROCESS
QUALITY AS A RULE

• THE QUALITY ASPECT HAS BEEN SERIOUSLY ADDRESSED AND, BESIDES PERMANENT ASSOCIATION WITH QUALIFIED CERTIFICATION BOARDS, THE GEOMETRY, THE WEIGHT AND ALL OTHER PARAMETERS NECESSARY TO GUARANTEE THE QUALITY OF THE PRODUCTS ARE DETERMINED BY THERMO-DYNAMIC CALCULATION PROGRAMS APPLYING THE MOST ADVANCED MATHEMATICAL METHODS.

• DAILY CONTROL OF THE ENTIRE PROCESS.

• DAILY SAMPLING FOR ROUTINE TRIALS.

• WEEKLY TEST MADE ON BATCH AND FINISHED PRODUCTS INSIDE OUR PLANT AND OUTSIDE IN EXTERNAL INDEPENDENT LAB.
QUALITY AS A RULE

- STATIC CORROSION LAB TEST
QUALITY AS A RULE

FUSED ALUMINA
1320°C-72h SODA LIME GLASS

BLISTER 0-10 SCALE RESULT 1-2
STONEING 0
CORROSION AS BONDED

FUSIONTEC BONDED ALUMINA
1320°C-72h SODA LIME GLASS

BLISTER 0-10 SCALE RESULT 1-2
STONEING 0
CORROSION 0.3% MORE
CONCLUSION

PROFESSIONALISM AND EXPERTISE COMBINED WITH A NEW APPROACH TO THE MANUFACTURING OF REFRACTORY MATERIALS FOR THE CONDITIONING OF GLASS ARE THE FOUNDATION PILLARS OF FUSIONTEC.

OUR GUIDELINES ARE THE FOLLOWING:

• QUALITY AS A RULE.
• R&D AS A MISSION.

Thank you very much for your attention.