SAINT-GOBAIN GYPROC	EQUIPMENT SPECIFICATION SHEET	
		REV.
PROJECT TITLE **General Specification**	PROJECT NO.	
DESIGN CAPACITY	BELT SPEED	
PROCESS AREA **All**	DOC. NO. **1500-AP0-TSP-GMT-005**	
EQUIPMENT ITEM **Basic Mechanical Requirements**	SHEET 1 of 6	

1. General

1.1. All Plant and Equipment shall be designed to achieve maximum life of components with the minimum of maintenance.

1.2. In order both to comply with statutory requirements and to meet the Purchaser's safety standards the Contractor's attention is drawn to the need for risk assessment and hazard reduction at the design stage (as well as at other contract stages).

2. Machine Construction

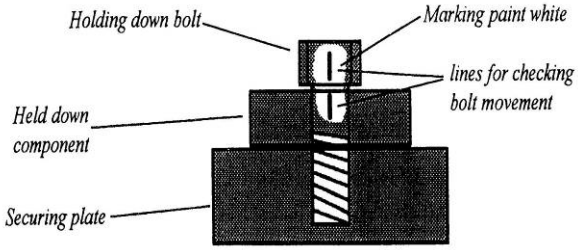
2.1. Machine and conveyor frames shall be constructed from bolted and welded steel sections.

2.2. Conveyor frames shall be height adjustable for levelling. Once levelled, then the frame adjustment shall be welded to avoid future movement.

REV	DATE	Description	BY	APPROVED
E	23-12-08	Title changed, sections relocated, new information and pictures added in blue on pages 2,3,4 and 5	S Selby	

2.3. Lifting facilities shall be designed into the machine to allow for safe loading unloading and installation. The location of lifting facilities shall take into account the centre of gravity of the machine so that the machine can be lifted level.

2.4. Equipment subject to vibration or repeated movement shall have the position of it's mounting bolts marked after final tightening in order to identify any later movement. Ideally fixings shall be of an anti-vibration / locking type. E



3. Foundations and Anchors

3.1. Machine foundations shall be designed considering all of the bearing loads including gravity, uplift, overturning, static, dynamic, seismic, wind, personnel occupancy, maintenance and lifting. The machine designs shall provide this loading information to allow the foundations to be correctly designed. E

3.2. General machine foundations shall be designed on a floor bearing load of 300 kN/m2 (3,500 pounds per square foot) under the area of the floor pad. This is based on a C35 concrete strength (3,000 pounds per square inch) and good compacted sub-structure. Loads in excess of this value will require special foundations and must be separately identified by the contractor. E

3.3. Where equipment will bear on a ground slab, then the base or sole plate shall be designed for the punching shear capacity of the slab and crushing of the concrete surface. A safety factor of 2 shall be used in sizing the sole plate. E

3.4. A high strength none shrink grout will be used to distribute the loads from the sole plate to the slab. E

3.5. The contractor will be responsible for the supply and fixing of all foundation anchors unless specifically agreed by the Engineer.

3.6. The length of penetration of foundation bolts shall be agreed after consultation with the civil designer. The number location and diameter of anchor bolts shall then be defined by the equipment supplier. E

3.7. Post set / drill in place foundation anchor bolts shall be of the chemical resin type unless specifically agreed by the Engineer. E

3.8. The design and construction of all equipment requiring anchor bolts shall be designed and constructed such that all anchor bolt holes may be drilled vertically with the equipment in position.

4. Maintenance

4.1. Particular care shall be taken in design to allow safe maintenance and access to the Equipment.

4.2. Where machine heights permit, then maintenance access shall be provided underneath machines following safe isolation of the machine and removal of the safety fence.

4.3. The designer shall consider the need for clear access at floor level such that equipment can be removed from the machine or delivered to the point of use on wheeled trolleys. The need for maintenance personnel to carry heavy components to the point of use should be avoided.

4.4. Within the machine design, the removal of large items (gearboxes, motors, etc) for maintenance must be considered. Consideration shall be given to the positioned of these items on the machine, the weight and size of the items and the ability to gain access to the item with lifting equipment and transport equipment.

4.5. Where the machine is fitted with heavy components (motors, gearboxes, etc.), then these components must be supplied with individual lifting features to enable easy removal for maintenance.

4.6. The machine designer shall identify to The Engineer any item or component which cannot be lifted by hand or accessed by a standard 4 Tonne fork lift truck and will therefore require alternative lifting arrangements such as a runway beam. The supply of an appropriate lifting beam can then be decided. Where the Contractor is providing a complete machine system including support steelwork, then the beam shall be designed into the structure. E

4.7. The machine designer shall identify to The Engineer any part of the machine where platforms are required for maintenance or operation. Where the Contractor is providing a complete machine system including support steelwork, then the platform and access shall be designed into the structure. E

5. Cleaning

5.1. A very high standard of cleanliness and maintenance will be required on all installations to ensure the highest possible availability of the Equipment. Any suggestion by the Contractor for achieving this end shall be given careful consideration.

5.2. Provision shall be made where reasonably practicable for internal cleaning without the need to remove guards.

5.3. Equipment shall be designed to avoid the generation of debris. Where the creation of debris is an inevitable part of the operation or is created by another part of the process, then the equipment shall be designed to retain as much debris within the process as possible and secondly to avoid accumulation of debris on wearing parts of the machine. The static equipment parts shall be designed so that debris falls from it and is accumulated at a collection point where it can be safely cleaned (avoiding horizontal surfaces where possible). E

6. Manual Adjustment Devices

6.1. Where manual adjustment of machine settings is required by the operator, then the adjustment device shall be safe to operate and shall not expose the operator to nip or trap hazards, either by the act of operating the adjustment device or from other equipment in the vicinity.

6.2. Where possible manual adjustment devices should be accessible from outside of the machine using extended shafts.

6.3. The adjustment device shall be labelled with the direction of adjustment and where practical limits of adjustment shall be specified to avoid operation outside of the machines optimal settings. E

6.4. The adjustment device should be fitted with a digital readout so that positions are easily repeatable. A notice explaining the “back lash” aspect of these adjustments should be fitted for the operators information.

7. Manufacturers Testing and Shipment

7.1. Where practical Equipment shall be pre-built and test run in the manufacturer's premises and inspected by the Engineer, prior to despatch.

7.2. After satisfactory testing, the Equipment shall be broken down only as much as is required for shipment. Wherever possible, equipment shall be despatched pre-assembled and carefully packed to minimise damage in transit.