CHAPTER XV

STANDARDIZATION OF BAGS FOR CEMENT PACKAGING

(a) INTRODUCTION

Every consumer product has to reach the market packed in appropriate container. The choice of container mainly depends upon such factors as consumer acceptability, ease of handling and utilization and overall economy. Traditionally, 50 Kg. Jute Bags are almost synonymous to Cement Packaging that being the only packing medium which fulfills most of the requirements at Production and Consumption ends.

Any kind of cement packaging in order to be called as appropriate must fulfill certain requirements such as optimum cost, ready availability and sustained supply of materials of constructions, their physical strength, frictional properties and temperature resistance ease of handling the bags on packers, conveyers and during transportation and their resistance of seepage, bursting, hooking and moisture ingestion. Sustained R&D carried out in this area will enable the industry to adopt newer parities of bags with
improved performance characteristics, for example, CRI Improved Heavy Cee Bags adopted by the industry in 1982, brought down the loss due to seepage from then 4% to 1%. The two lighter jute bags introduced by the Government namely (a) NCB Light Weight Jute Bags (8x10, 416) bring about consumption and the cost. Further developments in this area towards saving the jute consumption and reducing the cost shall continue in the years to come.

Jute bags have been in use for packing of cement from the very beginning. With the rapid increase in the production of cement in the country, the demand for bags has also increased manifold. "It is estimated that cement industry's present requirement of bags is approximately 14 Crores per month and it is likely to touch 18 Crores per month by 2000. This is inspite of the developments which are taking place in areas like bulk handling of cement, use of ready mixed concrete and use of pre-fabricated structures. Keeping in view the overall conditions existing in the country and the likely developments, it is certain that substantial quantity of cement will continue to be packed in bags to cater to the needs of small consumers" especially those scattered in about 6 lakh Villagers in the Country.
Sharp increase in the demand of bags for cement packing has put lot of pressure and has posed challenges to the jute industry which has been the traditional supplier of bags to the cement industry. Increased demand coupled with recent developments in the production of alternative type of bags like synthetics woven bags (HDPE/Polypropylene bags) multi wall paper bags, laminated bags, etc. have come into use. The use of new type of bags is gaining momentum and wider acceptance, perhaps due to the inherent properties of synthetic materials such as better strength, flexibility and tuffness, low moisture vapour transmission, better appearance, lighter weight and lower cost.

There is no doubt that use of proper packing material is as essential and important as production of quality goods. Without proper packing there is every possibility of damage, pilferage, seepage loss, contamination etc. during transportation and handling. Therefore, good and proper packing material, in this case bags have to protect the cement from contamination and adverse weather conditions, withstand handling and transportation hazards like accidental or intentional dropping and hooking offer ease in handling and storage etc. and above all has to be
reasonably priced. Under the present circumstances the use of any type of bag for packing cement will depend on the cost-performance ratio of the bags.

Standardisation of bags of different types for packing cement is not only necessary but absolutely essential so that the producer of bags knows as to what is to be produced and the user of bags knows exactly what he will get. None of them will have to waste time in unnecessary and avoidable disputes, wastages, rejections etc.

(b) INDIAN STANDARD OF BAGS

After the introduction of compulsory quality certification of cement produced in the country, the cement produced in the country requires to meet all the requirements laid down in the relevant standards on cement. Besides, cement manufacturers are required to pack cement in bags conforming to Indian Standards. Keeping in view the developments taking place in the filed of alternative packing bags, the standards on cement have allowed the use of various types of bags namely HDPE/PP Woven bags, multi wall
paper bags. The specification for HDPE and PP woven bags have already been prepared and approved with the help of bag manufacturers, cement manufacturers, NCB and others concerned after through laboratory evaluation and filed trials. Now HDPE/PP bags conforming to IS:11652-1986 and IS:11653-1986 respectively are available for use in the market.

(c) METHODOLOGY OF PREPARING STANDARDS FOR BAGS

The standards on bags are prepared after making laboratory tests and trials with respect to the construction and performance by carrying out tests like drop test, seepage test, etc. simulating the conditions the bags have to withstand during transportation and handling before the bags are put to actual field trials. Once the bags are found to withstand actual test conditions during field trials, only those constructional and performance parameters are specified in the standard specifications which are essential to control the quality of bags and which are easy to evaluate and test for checking conformity to the relevant standards.
As in the case of jute bags for packing cement, the new bags being developed also specify bag size, valve size, ends and picks per dm, warp, weft and seam strength, type of stitching and the bag weight, etc. Tolerances have been specified for various parameters taking into consideration the manufacturing capability of the industry as also the precision required of the bags without affecting the performance.

The detailed sampling procedure and standard methods of test have been specified in all these standards for testing of various characteristics so that there is no cause of any confusion or ambiguity in the testing and interpretation of results obtained for various parameters.

(d) ISI CERTIFICATION MARK SCHEME

To provide an effective means for implementation of national standards and for bringing advantages of standardization within the reach of the user, BIS is operating a Certification Marks Scheme under the ISI
Certification Marks Act. This enables BIS to grant licences to the manufacturers, producing goods conforming to the relevant Indian Standards, to apply ISI Mark on their products. ISI Certification Marks Licence is granted to manufacturer after the institution is satisfied that the manufacturer is capable to producing and testing goods according to the relevant standards on a continuous basis. Each licence includes a detailed Scheme of Quality Control and Testing to regulate the production in accordance with the requirements of the standard which the licencsee has to follow strictly. During the operation of the licence, BIS carries out periodic surprise inspections at the manufacturers premises to make sure that the quality control and testing scheme is being strictly adhered to. Samples of certified products are drawn from the production line, godowns and also from the open market and are tested in an independent laboratory for checking their compliance to the relevant requirements of the standard. Whenever defective material, inadequate processing or unsatisfactory product is detected, immediate corrective measures are initiated and the manufacturer is advised to take necessary steps for correction and not to mark his product with ISI Mark till such time the product quality improves and conforms to the
relevant IS Specification. However, if the complaints persist, the manufacturer is penalised under the Act for the violation or the misuse of the Mark by suspension or cancellation of the licence. The licensee is also under obligation to replace the defective or sub-standard goods free of cost.

The main aim of introduction of ISI Certification Marks Scheme was to make available quality goods to the consumers and also to afford a third party guarantee for ISI marked goods. It was also envisaged that ISI Certification Marks Scheme will not only help ordinary consumer but also the organised consumers in their procurements by way of saving their efforts in the preparation of standards, inspection and evaluation of the purchased material and help them in using their available resources for some other useful activities. It may be stressed here that inspection for acceptance or rejection carried out by organised or large-scale consumers depends mainly on the test results obtained from the samples taken out of the supplied lot, while ISI Certification Marks Scheme through in-process quality control and other checks ensures product of consistent quality as per the relevant standard and thus reduce the chances of failure.
At present about 500 units are operating ISI Certification Marks Scheme in producing PP bags as per IS:11653-1986. After the preparation of standards for other types of bags for packing cement the manufacturers will be required to obtain ISI mark for their bags as it is an obligatory provision to pack cement in bags conforming to Indian Standard.

CONCLUSION

Packing of cement in bags of appropriate quality is absolutely necessary to avoid wastage of any type during transportation and handling. It should be understood that production of quality bags is not a matter of chance but requires deliberate and consistent efforts on the part of the manufacturers to produce as well as to maintain quality. In order to produce bags of appropriate quality on continuous basis, it is also necessary not only to use proper raw materials and manufacturing process but apply proper
checks and carry out tests at various stages of manufacture. However, it would be borne in mind that any extra inputs necessary for achieving quality are repaid in more than adequate measures by way of reduction in wastages and rejections. All this in turn will benefit the ultimate consumer by way of lesser cost as well as save the country from unnecessary wastage of cement which can occur due to use of wrong packing materials.