RATED VS. NON-RATED HDPE MATERIALS

A MAJOR MANUFACTURER OF HDPE MATERIALS
ANSWERS A FEW BASIC QUESTIONS

Q. Is there a shortage of rated materials such that certain pipe manufacturing companies could not meet the consumers demand if rated materials were used?

A. There is no shortage of rated materials. Some low risk or low liability market applications are less regulated or non-regulated. In these cases, lower price, non-rated materials are used. For applications requesting ten years and above in satisfactory performance, the use of rated materials is highly recommended, if not mandatory.

Q. Are non-rated materials made from virgin raw materials?

A. Non-rated material grades produced by our Company are made of virgin raw materials, but contain different, less efficient antioxidants and stabilizer systems as compared to rated materials.

Q. Are reprocessed consumer materials used or partially used in the manufacture of non-rated materials?

A. We do not use reprocessed consumer materials in the manufacturing of non-rated materials. The additional heat history, in addition to the unknown origin of the prime source, increases the opportunity for unacceptable variation in performance.

Q. Is the material non-rated because long-term mechanical properties cannot be consistently established (i.e., too much variation)?

A. Non-rated materials are not evaluated or tested for long-term mechanical properties, as they are not engineered for long-term performance. However, consistent performance of certain properties is expected for specific grades.
Q. Do non-rated materials provide consistent assurance that environmental stress crack resistance (ESCR) has not changed?

A. Some non-rated materials may not be tested for this property. In this case, there is no assurance on its consistence. Note that ESCR is only one aspect of long-term performance. Several other factors may affect long-term performance.

Q. If non-rated materials do have known initial and long-term properties that can be relied on in design, why are they not published as meeting some minimum mechanical property standards?

A. Initial properties of most grades of non-rated materials are defined at our Company pending the end-use application. These properties are published on our product data sheets. With the exception of basic ESCR, important long-term properties are not tested nor defined for non-rated materials.

While the question as to the primary objective in the design of HDB rated materials was not asked, we were advised the primary objective is long term performance and that long term performance antioxidants and processing stabilizers are incorporated in the base polyethylene of rated material to prevent degradation.