

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**.