



Parker Hannifin Corporation
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Reference: Rubber Shelf Life

Due to lingering confusion concerning shelf life of elastomer seals and AS5316, the O-Ring Division is Issuing this letter for all Parker Distributors, Territory Sales Managers, and Regional Sales Managers. Please distribute this letter to any and all customers and personnel who may be affected by this change.

AS5316 is an Aerospace Standard based on the recommended practice in the cancelled ARP 5316. Our team at Parker O-Ring and Engineered Seals Division accepts the guidance found in AS5316 as sound basis for establishing shelf life.

If orders are placed with requirements calling out percentage of shelf life remaining, the shelf life limits suggested in AS5316 (and/or listed below) will be assumed, unless otherwise stated. Additional charges for restrictive shelf life requirements will be applied as before.

The shelf life guidance listed in AS5316 is limited to materials supplied to various AMS and US Military specifications. AS5316 is controlled and issued by the Society of Aerospace Engineers. The SAE committee has specifically limited the shelf life listings to include AMS and MIL spec materials. At Parker, we have expanded on that list to include all our elastomeric materials. This has meant grouping all compounds by polymer family and assigning that family a uniform shelf life, as well as issuing shelf life statements for two polymer families not covered by AS5316: Hydrogenated Nitrile (HNBR) and polyacrylate rubbers (ACM & AEM). The shelf life of each polymer family as practiced by Parker O-Ring and Engineered Seals Division is listed below:

3 Years: SBR
5 years: AU (milleable)
15 years: NBR, CR, HNBR, ACM, AEM, and ECO
Unlimited: EP, FKM, FFKM, IIR, VMQ, FEPM, FVMQ

These limits are based on examination and testing of rubber seals with extensive shelf age, in some cases more than 30 years. In addition to practical experience, these recommendations also conform to theoretical expectations: those materials with Unlimited Shelf Life show no chemical potential for degradation due to atmospheric exposure and are chemically and physically stable.

In the past, the "shelf life clock" began on the last day of the calendar quarter in which it was molded. AS5316 does not mention the quarter of cure, but instead refers to the "time of manufacture." At Parker. We utilize the last day of the quarter of cure as the time of manufacture.

Finally, AS5316 recommends individual packaging of rubber seals to protect them and maintain batch traceability. We have found that our bulk packaging accomplishes the same. In addition, the data utilized by the SAE committee was based on the examination of 32-year-old seals. No differences were found between bulk packaged and unit packed seals in this study. Therefore, the O-Ring and Engineered Seals Division feels that unit packaging is not critical for attaining the stated shelf lives; however, it will be available upon customer request.

Thank you,

Parker O-Ring & Engineered Seals Division
Applications Engineering Department