Strain Gage Selection

Gage Series

The strain-sensing alloy and backing material are not subject to completely independent selection and arbitrary combination. Instead, a selection must be made from among the available gage systems, or series, where each series generally incorporates special design or construction features, as well as a specific combination of alloy and backing material. For convenience in identifying the appropriate gage series to meet specified test requirements, the information on gage series performance and selection is presented here, in condensed form, in two tables.

Standard Strain Gage Series

The Standard Gage Series table gives brief descriptions of all general-purpose Micro-Measurements gage series - including in each case the alloy and backing combination and the principal construction features. This table defines the performance of each series in terms of operating temperature range, strain range, and cyclic endurance as a function of strain level. It must be noted, however, that the performance data are nominal, and apply primarily to gages of 0.125 in (3 mm) or longer gage length.

Test Profiles

The Strain Gage Series and Adhesive Selection table gives the recommended gage series for specific test "profiles," or sets of test requirements, categorized by the following criteria:

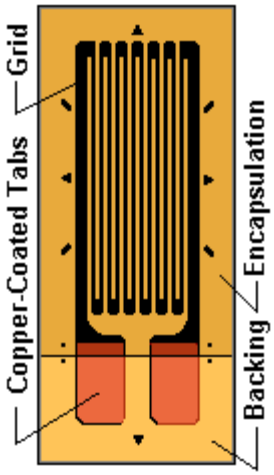
- type of strain measurement (static, dynamic, etc.)
- operating temperature of gage installation
- test duration
- accuracy required
- cyclic endurance required

This table provides the basic means for preliminary selection of the gage series for most conventional applications. It also includes recommendations for adhesives, since the adhesive in a strain gage installation becomes part of the gage system, and correspondingly affects the performance of the gage. This selection table, supplemented by the information in the Standard Gage Series table, is used in conjunction with Catalog 500, *Micro-Measurements Precision Strain Gages* , to arrive at the complete gage selection. The steps for accomplishing this are described in the Gage Selection Procedures.

When a test profile is encountered that is beyond the ranges specified in the Strain Gage Series and Adhesive Selection table , it can usually be assumed that the test requirements approach or exceed the performance limitations of available gages. Under these conditions, the interactions between gage performance characteristics become too complex for presentation in a simple table. In such cases, the user should consult our Applications Engineering Department for assistance in arriving at the best compromise.

As indicated in the Strain Gage Series and Adhesive Selection table , the CEA Series is usually the preferred choice for routine strain-measurement situations, not requiring extremes in performance or environmental capabilities (and not requiring the very smallest in gage lengths, or specialized grid configurations).

CEA-Series Strain Gage



CEA-Series strain gages are polyimide-encapsulated A-alloy gages, featuring large, rugged, copper-coated tabs for ease in soldering leadwires directly to the gage. These thin, flexible gages can be contoured to almost any radius. In overall handling characteristics, for example, convenience, resistance to damage in handling, etc., CEA-Series gages are outstanding.