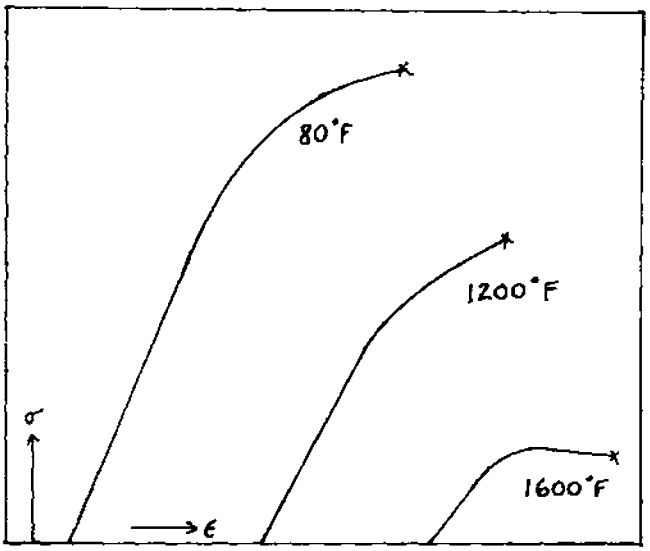

Fig. 2—*σ–ε data for Pt 8W alloy at various temperatures*

the sensor and instrumentation over the full range of conditions representative of the environment in which the actual test is to be performed.

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Protection of Strain Gages on Rebar

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When strain gages are installed on concrete reinforcing steel, the major cause of failure is from damage during construction or when placing the concrete that surrounds the rebar. The procedure described here was developed and used very successfully by PSE&G Research and Testing Laboratory on over 500 strain-gaged rebars. (See Fig. 1.)

(1) Install the required strain gages on the rebar, following the manufacturer's recommendations.
(2) The lead wires are pulled through a two-foot section of flexible liquid-tight conduit before being attached to the gages. The strain-gage end of the flexible conduit is flattened over the lead wires for approximately one inch and secured to the rebar with cable ties. The other end of the flexible conduit has a liquid-tight flexible fitting attached to accept standard conduit.
(3) The leads are attached to the strain gages after forming a loop in the cable to prevent any tension in the cable reaching the gage.
(4) After soldering the leads, the gage was coated with electrical grade RTV (DOW #3145) to prevent the subsequent potting compound from adhering to the gage.
(5) A length of clear plastic tubing, of sufficient diameter and length to completely cover the gage area and extend over the end of the previously installed flexible conduit, is placed over the rebar.
(6) One-inch strips of flexible foam is wrapped around the rebar at the end of the clear tubing to form spacers, preventing the tubing from touching the rebar.
(7) The clear tubing is adjusted over the plastic spacers and the ends wrapped with two-inch wide plastic electrical tape.
(8) A slot is cut in the clear tubing forming a pour spout for the potting compound.
(9) Prepare the electrical-grade potting compound (Scotchcast No. 12 Resin) following manufacturer's instructions.
(10) Fill the tubing with the potting compound, ensuring that the flexible conduit is on top and elevated to prevent the potting compound from escaping.
(11) Allow the potting compound to cure according to manufacturer's directions.