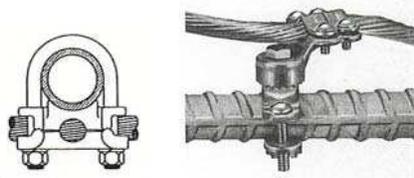
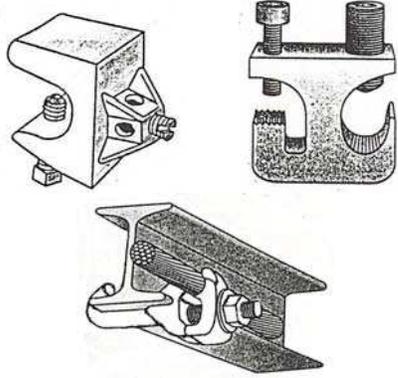
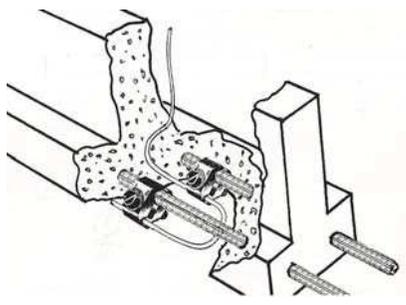
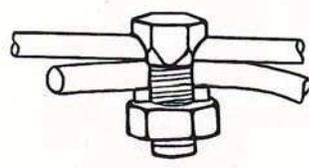
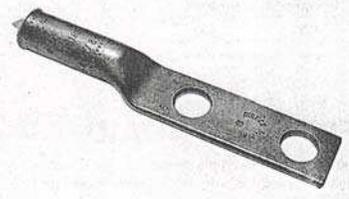


The 2005 National Electrical Code requires all “present” grounding electrodes to be bonded together (connected into a network) to form a “grounding electrode system” (to provide the effectiveness and reliability of multiple grounding). This change is expected to create a dramatic increase in grounding connections, especially for Ufer grounds and metal building structures. There is also likely to be a decrease in use of traditional ground rods and “acorn” clamps. Refer to local codes and authorities for details.

<b>2005 Code (250.52) requires bonding together all “present” electrodes to form a “grounding electrode system”.</b>		
<p><b>1) Buried metal water pipe</b></p>  <p style="text-align: center;">G1S-DB Economy Series</p>  <p>C100 Series U-bolt Clamp    G140-DB High-Wing™ Series</p>	<p><b>2) Metal frame of building</b></p>  <p style="text-align: center;">GBC Series I-Beam Clamps</p>	<p><b>3) Concrete-encased electrode “Ufer” Ground</b></p>  <p>J30-DB for 1/2” Rebar (8SOL-4AWG) J31-DB for 5/8” Rebar (6SOL-2/0AWG) J32-DB for 1/2-3/4” Rebar (#2-4/0AWG)</p>
<p><b>4) Ground ring #2 AWG</b></p>  <p>#A8-DB Direct Burial Split Bolt</p>	<p><b>5) Ground rod</b></p>  <p>#G31 (5/8”) Acorn Clamp #G30 (1/2”) Acorn Clamp</p>	<p><b>6) Ground plate</b></p>  <p>L-NDB Compression Lugs</p>

The most significant changes require bonding new rebar installations (does not require disturbing existing concrete):

- 3) **A concrete-encased electrode (Ufer ground)** is typically 20ft of 1/2” diameter (No. 4) rebar encased in a concrete footing. Use the Greaves #J30-DB rebar clamp to connect this rebar to a #4AWG grounding electrode conductor, which is then connected to another element of the grounding electrode system,

And bonding electrodes that are an inherent part of the metal building structure:

- 2) **Metal building frame (I-beam)** - choose a beam clamp in the GBC Series (see GBC sheet) for the size of I-beam and wire, or drill the central web of the beam to mount a lug.

For the familiar types of grounding electrodes, use an appropriate type and size connector, such as:

- 1) Buried metal water pipe – use a pipe clamp rated for direct burial.
- 4) Ground ring – a #2AWG bare conductor buried in a ditch around the structure  
– use a #A8-DB Direct-Burial Split Bolt to connect to the grounding electrode conductor
- 5) Ground rod – use an acorn clamp such as Greaves #G31 (5/8”) or #G30 (1/2”)
- 6) Ground plate – a buried metal plate (12 X 12 X 1/16 inch copper)  
– use a direct burial lug such as the Greaves L-NDB series or TG series bar Clamp.