NAIL-GLUING OF ROOF TRUSSES, FRAMES AND OTHER STRUCTURAL COMPONENTS

NAIL-GLUE FOR STRENGTH AND ECONOMY

• Nail-gluing makes possible roof trusses, frames, and other structural components which are very stiff and strong. A glued joint holds two members firmly without slipage.

• In nail-gluing, the adhesive is applied to the structural members and nails or staples are used only to give rigidity to the unit during handling and stacking and to provide pressure while the glue sets. The strength of the finished connection is entirely dependent on the glue bond. Moisture content of lumber for the trusses and frames must be 19% or less.

• The casein glue must meet Federal Specification MMM-A-125, Type I or Type II. (Type II contains a mold inhibitor.) Mix the glue according to the manufacturer's instructions. Protect the units from rain. After nailing, stack and do not handle again during the curing period.

• Nail-gluing should be used only with properly engineered designs. Use designs presented in the Illinois-Purdue instruction sheets for nail-glued trusses and roof-frames.

• Design of Nail-Glued Plywood Gusset Plates, Purdue University Agricultural Experiment Station, Bulletin 613, 1954, Lafayette, Indiana.

Instruction Sheets, University of Illinois Small Homes Council-Building Research Council, Urbana, Ill. (50 c each)

#2 — 2 / 3 2 N a il-G lu e d “W” Roof Truss
#3 — 3 / 3 2 N a il-G lu e d “W” Roof Truss
#4 — 4 / 3 2 N a il-G lu e d “W” Roof Truss
#5 — Long-Span Nail-Glued “W” Roof Truss
#6 — 2” x 2” Nail-Glued King-Post Roof Truss
#7 — 2” x 6” Nail-Glued King-Post Roof Truss
#8 — Sloped Ceiling, Plywood Web Roof-Frames
#9 — Plywood Web Roof-Frame, 1/12 Slope
#10 — Hip-Roof Nail-Glued Trusses
#12 — Reselection of Lumber for Roof Trusses
#13 — Variations for Building Nail-Glued “W” Roof Truss
#21 — Nail-Glued Header for Wall Panels
#22 — Nail-Glued Headers for Larger Openings

MIX GLUE
Casein glue is recommended. The glue must meet Federal Specifications MMM-A-125, Type I or Type II. (Type II contains a mold inhibitor which is required by some local authorities.) The glue must be mixed according to the manufacturer's instructions. Thin or watery mixtures must be avoided.

LAY OUT STRUCTURAL COMPONENT
Lay out on a flat, sturdy surface (jig, subfloor or slab — not the ground) the truss, roof-frame or other component to be built. The units being constructed should be protected against rain and allowed to cure at temperatures above 50° F.

Do not use second-hand or dirty lumber.

APPLY GLUE
Apply glue directly to the lumber members by means of a paint roller, glue brush or mechanical glue spreader.

Paint Roller
Glue Brush

Correct Application
Wasteful Application

PUT PLYWOOD IN POSITION
After the glue has been applied to the lumber members, place the plywood in position on the glue area and fasten.

FASTEN PLYWOOD
Nail or staple plywood preferably by means of a mechanical fastening device. Drive fasteners hard so that their heads are buried in the plywood. Solid-wood splice plates must be nailed manually with common wire nails.

Mechanical Fastening
Types of Fasteners Used:

Nail Heads Buried in Plywood

TYPES OF FASTENERS USED:

For plywood gussets

4-d Nails Type "A" Type "B"

For solid splice plates

6-d Nails

JUDGE GLUE JOINT BY SQUEEZE-OUT
When two members are fastened together, some of the glue will be squeezed out if the correct amount of glue has been used. This is visual certification of a good glue joint.