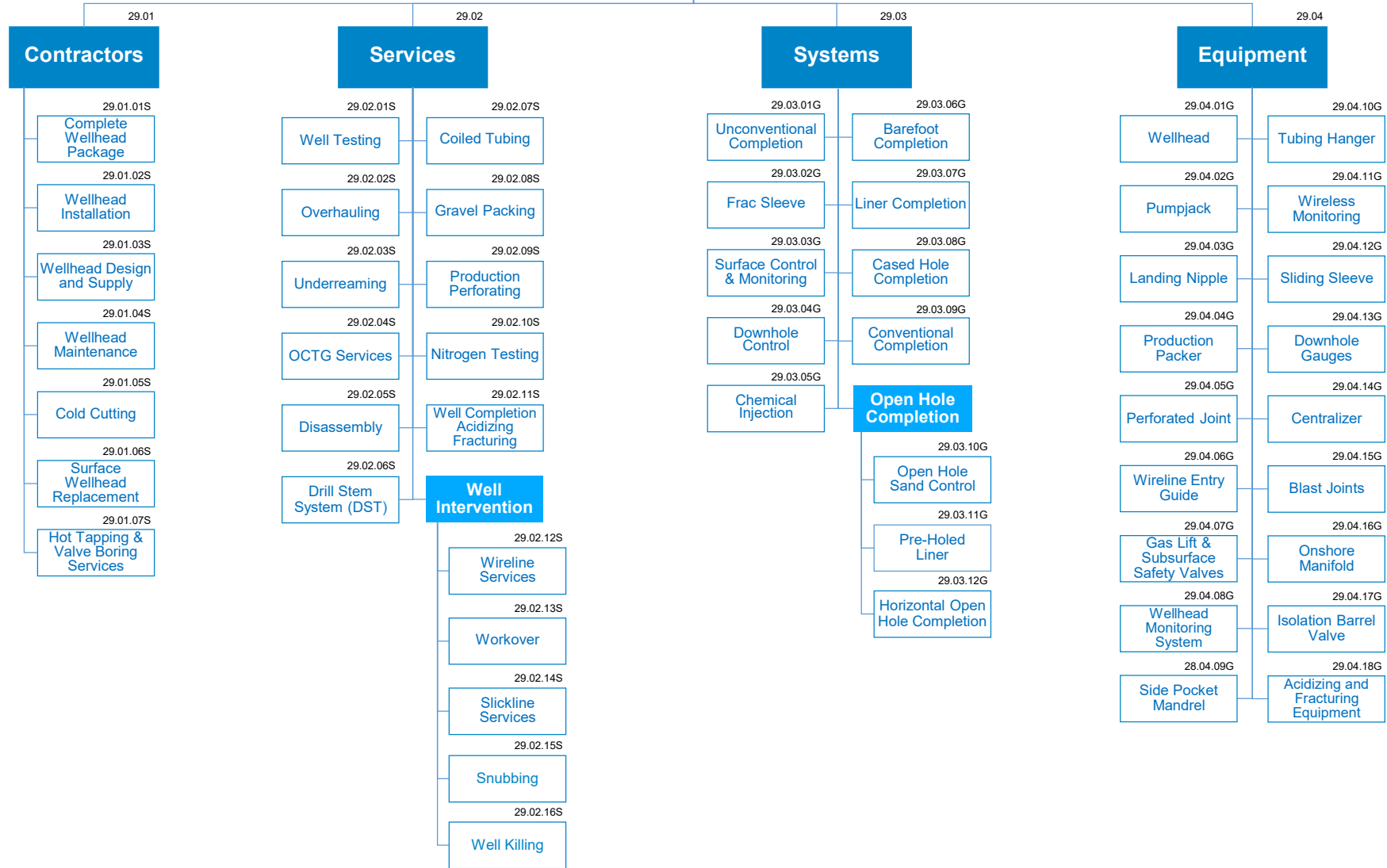


# Well Completion



# Well Completion

This family group encompasses all goods and services employed in well completion operations. The group is further divided in four families that range from full well completion contractor services to more specific services and equipment. Well completion services also include here disassembly activities.

## MAIN RATIONALES BEHIND THE STANDARD CATEGORIZATION

### Contractors

- This family includes whole well completion services provided by specialized contractors.
- “Cold Cutting” refers to cutting and bevelling services without the use of flames nor the production of sparks.
- “Hot Tapping & Valve Boring Services” refers to Hot tap performed into valves on wellheads, tubing, and trees. It can be carried out using either electrically, hydraulically, or pneumatically operated machines.

### Services

- This family refers to all support services for well completion activities in both onshore and offshore sites. It also includes disassembly services performed for modifications or decommissioning.
- “Production Testing” refers to dynamic production monitoring and productivity sustaining activities. It includes diagnosis and solution of well problems, multiple wells data interpretation, and produced fluids profiling.
- “Remote visualization and advise” can be found in Group 26 (Reservoir Management)
- “Workover” is here intended in its specific acceptance as the process of pulling and replacing a completion involving invasive techniques.
- “Well Testing” Includes Swabbing Activities
- “Coiled Tubing” is part of “Drilling Services” group and is identified a the category code 27.03.21

### Systems

- “Conventional Completion” include casing flow, casing and tubing flow:, pumping flow, tubing flow, gas lift well, single-well alternate completions, single-well concentric kill string, single-well 2-tubing completion.
- Goods as perforated Liner or Perforated casing are considered as OCTG as the suppliers with capabilities to supply them are the same as OCTG ones
- “Systems for Unconventional Completion” refers to systems where plays like shale, margins tend to be razor thin.
- “Chemical Injection” refers to the activities performed for well completion systems, not to be confused with “Dosing Systems / Chemical Injection Packages on Skids” “03.10.01G”
- “Systems for Barefoot Completion” refers to systems that has no casing or liner set across the reservoir formation.
- “Systems for Open Hole Completion” sub family includes the three categories of “Open Hole Sand Control”, “Pre-Holed Liner” and “Horizontal Open Hole Completion”

### Equipment

- This family includes equipment and components used for well completion.
- “Wellbore Cleaning Tools” are included in the category “OCTG Tools” of the group 28 (Drilling Equipment and Materials)
- “Acidizing and Fracturing Equipment” does not include fracturing pumps that are already in Group 28 “Drilling Equipment and Materials”