



AWWA ACE Competitions - Rules and Regulations

PIPE TAPPING

DISCLAIMER

D-1. AWWA specifically does not endorse products manufactured by sponsors and takes no position concerning the adequacy of such products or their compliance with any AWWA standard.

D-2. Each competitor will be required to complete the proper waiver and registration documentation prior to competing in any event.

D-3. This contest is officiated over by very competent officials who are striving for fairness in their judgement for the events so that all contestants are judged as equally as possible. Fair and equal treatment for each and every contestant is the goal of this contest. There is no intention to provide anyone with an advantage. This contest is for the fun and enjoyment of the participants and spectators.

D-4. Interested in joining the Pipe Tapping Subcommittee? Submit an application to the Operator Involvement committee through the AWWA website at <http://www.awwa.org/membership/get-involved/volunteer.aspx>.

ELIGIBILITY

E-1. A tapping team shall consist of no more than four (4) persons; three (3) workers and one (1) coach. The coach may also serve as the alternate worker whenever the team shall deem appropriate and a new coach appointed from the four original team members for the next tap. No more than three (3) workers and one (1) coach are permitted in the secured tapping area during the team's preparation period and during the two (2) official taps. All persons on the team shall be AWWA members. This membership may be an individual membership, as an active or affiliate member of AWWA, or team members may be regular employees of a utility member or organization member of AWWA. Each section is responsible for verifying this membership requirement before entering the team in the contest.

E-2. Each AWWA section may enter one (1) men's team and one (1) women's team with female or male coach in the Annual Conference Preliminary Tapping Contest. Sections containing more than one state or province may enter one (1) men's team and one (2) women's team with female or male coaches for



the number of states or provinces in the section. Only AWWA section teams or international teams that have qualified by competing in a section or an international competition and are sponsored by a water utility company, are allowed to enter in the Preliminary Tapping Contest. Section team(s) that have qualified by competing in a section or international competition are allowed to enter in the Preliminary Tapping Contest as long as the number of teams does not exceed the number of states or provinces. It does not matter if all the section teams are from one state. This team may be from one utility in the section or any all-start combination the section may decide to enter as their representative. In the final competition the title will be awarded to the fastest tapping time. Additional section teams may enter the competition on a space-available basis and only with the permission of the Tapping Contest Committee Chair.

E-3. Only one (1) men's team and one (1) women's team per utility will be allowed to enter the Preliminary contest each year. The exception will be when a utility's team is the current reigning AWWA Annual Tapping Champion, which is automatically entered in the next year's Finals. In this case, the utility may enter another (second) team in the Preliminary Tapping Contest with full privileges and rights as all other teams in the preliminaries. Ladies and Men's teams will not be separated in conducting the preliminaries.

E-4. Each year the ACE host city utility shall be invited by AWWA to participate in the Preliminary Tapping Contest as a fully accredited entry. This special team entry shall be in addition to the normal entry allotment for the section.

E-5. Section Tapping Team members or team coaches who have participated as a competitor in the past three years are not eligible to serve on the AWWA Tapping Subcommittee. Likewise, Tapping Subcommittee members are ineligible from serving as a team member or team coach for 3 years following their service as a subcommittee member. The purpose of this rule is to eliminate any perceived conflict of interest.

E-6 Unsportsmanlike behavior will not be tolerated and individuals or teams could be disqualified from the competition.

INTRODUCTION

I-1. The teams will be required to tap a water pressurized ductile iron pipe, install a corporation stop, cut and flare 3/4" copper tubing for installation of a water service line with a curb stop and connecting this line to a meter yoke.

I-2. Each team will be allowed to have two (2) official taps (turns), at their option, to complete the tapping event with the shortest time of the two taps to be their *Official Time* for the event.



I-3. A time period of 30 minutes shall be allowed for each team to complete their two (2) official taps.

I-4. A time period of 15 minutes shall be allowed for each team to prepare for the tapping event in a staging area (this may include a five (5) minute time period in a designated area between the staging and tapping carpet), this includes cutting copper and securing all parts and material needed to complete their two (2) official taps. No personal bags will be allowed on the floor.

I-5. The four (4) men's and two (2) women's teams from both Preliminary Tapping Competitions with the fastest Official Times from both divisions will advance to the final round to compete against the previous year's tapping champions. The Preliminary teams' times will be used only for qualifying for the finals and to establish the starting schedule of the Finals, i.e., the slowest time of the six (6) will be the first to tap in the finals. The starting times for the finals will be assigned immediately following the conclusion of the Preliminaries.

I-6. The ACE Tapping Contest will take place over three days with the Preliminary Tapping Contest being held on Monday and/or Tuesday (as necessary) at a designated area. The Final Tapping Contest will occur on Wednesday at the same location or within the Exhibits Area as required. The contest location will be announced to all teams entered in the contest each year before the beginning of the Annual Conference.

I-7. Each team may place a team banner, during their official tapping period, which is not larger than four feet by six feet (4'x6') in the area designated by the Tapping Committee Chair. Placement of the banners will be reviewed at each event on a space permitting basis. The banners will not display offensive language, slogans, or graphics.

HOW YOU WIN

WHAT WINNING TEAM RECEIVES

W-1. The AWWA Annual Tapping Contest Champion is automatically eligible for the next year's ACE Tapping Contest Finals as a special entry and is not counted as the Section's entry allotment.

COMPETITION

C-1. There is no such thing as equipment failure. All equipment was received in good working order prior to the pipe tapping competition. This is a contest of skill and dexterity as well as speed.

A.) All equipment utilized in the pipe tapping competition are new or reconditioned and in perfect working condition, and as such is in new condition.



- B.) Any tools, equipment, and other supplies provided for this competition that are broken/damaged will be considered to be broken/damaged by neglect of the team and will not be replaced during their turn.
- a. Broken bits are the result of neglect by the team and only two bits are allowed per team, one for each tap. A broken bit is the problem of the team with the broken bit and will not be replaced during their turn.
 - b. There is no time penalty for broken equipment or drill bits unless resulting from obvious malicious mishandling.
 - c. Malicious treatment of equipment may be considered a safety violation depending on the circumstances.

C-2. The work area for the pipe tapping competition shall be large enough to accommodate all competitors and judges and their equipment. Equal space must be provided for each team. A minimum of 10' clear area shall be provided between the working area and the spectators to afford safety from accidental flying tools or materials during the contest.

C-3. When a stage is utilized for the contest, suitable carpet shall be laid over the entire stage to present uniform footing for all contestants. Arrangements should be made to eliminate all water spilled during an event before the next event starting so as to provide the best possible working conditions for each team for both of their taps.

C-4. The team is responsible for insuring the water supply is turned on and the air has been bled from the Ductile Iron Pipe prior to each tap. The corporation stop shall be tapped into the pipe at approximately 45 degrees from the top of the pipe.

C-5. Pipe shall be securely fastened to support blocks at a height of 8.5" to the bottom of the pipe above the ground or stag floor. Support blocks shall be of adequate construction so as to secure the pipe firmly in position suitable for the rough handling required.

C-6. Distance from the pipe to the meter yoke shall be approximately 10' and nearly perpendicular to the pipe as best will accommodate the use of two straight 6' lengths of copper service pipe. This meter yoke stand may be set by the team, under the supervision of the official(s), to any precise distance that will best accommodate their style of work. Angle meter yoke shall be approximately two (2) feet above the ground or stage floor; this includes the 1/2" plate attached to the bottom of the tripod.

C-7. Curb stop to be located approximately half way between the pipe and the meter yoke. End connectors will be inspected and attached, by a team member, to each end of the curb stop and to the meter yoke prior to the start of the event. The officials will then inspect the fitting to insure the end connectors are in the proper position, fully threaded, but not tight, prior to start.



C-8. The tubing representing the service line shall be 3/4" type K copper, four straight 6' lengths, each team will cut and crimp the copper before the start of their team's official time under supervision of an official.

C-9. Curb stop position after connections to tubing shall be no more than 4" above the ground/floor to the top of the inlet tubing and shall be in a "near vertical" position, i.e., no more than 10 degrees left or right of vertical.

C-10. All connections shall be flared and drip-tight. The official(s) will bleed air from the service line before checking for leaks.

C-11. The service line shall contain no crimps that would impede the normal flow of water through the pipe. Officials shall determine the severity of any crimp by disconnecting the nearest joint carefully without disturbing the crimped section of the pipe and passing a marble or sphere approximately 1/2" diameter through the pipe past the crimped section. If the marble passes through the crimp, the crimp is not damaging and there is no penalty. If the marble does not pass through the crimp, a penalty will be assessed to the event time.

C-12. An end connector will be utilized on the one end of the meter yoke, which will be connected to the service line. This connector will serve to protect the threads on the meter yoke. The competing team will examine the connector threads carefully prior to the start of the event and request a new adapter from the head official if the threads are damaged enough to impair their work.

C-13. The tapping team shall position themselves and all equipment, tools, and materials beside the pipe to be tapped prior to the start of the tap. At the start of the tap, team workers may be standing or kneeling on the floor, but shall not be touching any piece of equipment or tools.



- A.) The coach shall be positioned out of the way of the team and the official(s), and may be located anywhere in the area. The coach may lead the team by instructions and encouragement in any way, but shall not be allowed to physically assist the team or utilize in any way the tools or equipment during the tap.
- B.) The tapping machine may be inspected, cleaned, and lubricated as necessary by the team before starting either turn. The drill bit will be chosen by the team from a ready supply of bits provided and may be assembled in the tapping machine prior to the tap at the option of the team.
- C.) The corporation stop may be placed in the adapter prior to the tap at the option of the team. Joint compound may be applied to the threads of the corporation stop after time starts at the option of the team.
- D.) Saddles and rubbers for the tapping machine may be assembled and ready on the floor before the tap. Chain hooks may be in the chain yoke on the floor, but the chain must be on the floor and not hooked to the chain hooks before the start of the tap.
- E.) The same bar shall be used to make the tap and insert the corporation stop. Two bars will not be allowed for a tap.
- F.) The tapping machine feed-nut-and-yoke shall be securely in place around the boring bar at all times while the pipe is being drilled, tapped, (*) and inserting the corporation stop. If the feed-nut-and-yoke falls off and there is no attempt to continue inserting (turning ratchet) the drill or corporation stop, THE TEAM WILL NOT BE PENALIZED.
- G.) The corporation stop shall be securely inserted into the pipe with no more than four (4) threads showing when the tap is completed. A designated official will count threads. The threads are counted at the half-way-point on both sides of the corporation. If more than four (4) threads are counted on both sides, THE TEAM WILL BE PENALIZED.

(*) When removing the boring bar from the tapping machine after threading has been completed, the yoke MUST be in place until the tap has disengaged from the pipe and the boring bar must be FULLY extended before the cap is removed from the cylinder.

(**) Failure to follow this procedure will be considered a SAFETY VIOLATION and the team shall be penalized accordingly.



(***) When inserting the corporation stop, the cap MUST be installed on the cylinder before the yoke is placed on the boring bar. The corporation stop will be considered to be inserted when the ratchet is reversed to disengaged from the corporation stop.

- H.) The corporation stop shall be securely inserted into the pipe with no more than four (4) threads showing when tap is complete. The official(s) decision on the matter will be final.
- I.) Pine tar or grip enhancers may be applied to gloves. Once the pine tar or grip enhancer has been applied, the gloves cannot be used to touch any portion of the equipment or materials until after the official start of the tap.
- J.) Teams will not be allowed to participate if they are wearing articles of clothing or using equipment plainly displaying offensive language, slogans, or graphics.

C-14. The timing for the event shall begin at the head official's signal and end when the corporation stop is turned on by one of the workers and all work has ceased. At that time, the head official shall shout STOP or sound a suitable signal announcing the end of the tap. All team members will back out of the immediate work area to permit the officials to evaluate the work.

EQUIPMENT & MATERIALS

E-1. All equipment is to be provided by AWWA, or host utility for each tap.

E-2. Mueller B-101 tapping machines (not 100), completely outfitted, including new style ratchets; old style ratchet may be allowed in competition if available. Bicycle-type chain is not allowed.

E-3. Brass corporation stops, Mueller Co. (H-15000N), and curb stops, Mueller (H-1502-2N), 3/4", new, one each, to be provided for each tap.

E-4. Flaring nuts shall be provided for all connections to stops and meter yoke and shall be as manufactured by Mueller Co. (H-15430N).

E-5. Type K copper tubing, 3/4", 6' lengths, two (2) lengths for each tap.

E-6. Meter yoke, Mueller Co. (H-14180), 5/8" x 3/4", secured firmly to a portable stand.

E-7. End connector, Mueller Co. (H-15460N), 90 degree female connector, 3/4", shall be provided to allow the service line to be connected to the meter yoke. This connector is utilized to protect the threads of the meter yoke from the service line connections.

E-8. Pipe wrenches, four (4), 14", REED Manufacturing Company (RW-14).



- E-9.** Hammers, two (2), shall be a brass, 3lb hammer for flaring, Mueller Co. (H-18025) or REED Manufacturing Company (HAM3, 3lb, 06088).
- E-10.** Adjustable (crescent-type) wrenches, two (2), 12", REED Manufacturing Company (CW12).
- E-11.** Tubbing cutters, two (2), heavy duty, REED Manufacturing Company (T-20). The team shall examine the cutting wheels before each tap to determine their condition and ask the officials for a replacement if necessary. THESE ARE THE ONLY CUTTERS ALLOWED!
- E-12.** Flaring tools, two (2), Mueller Company (H-18000), or REED Manufacturing Company (HF 3/4).
- E-13.** Cutting grease, Mueller Co. (88366) shall be supplied for all teams to utilize in the contest.
- E-14.** ONLY lubricating grease from Mueller Co., light machine oil in spray or liquid, and WD-40 lubricant shall be provided for teams to lubricate the equipment and tools. No lubrication of any type will be allowed on the end connectors, threads, or flaring tool prior to the start of the tap.
- E-15.** Combined drill-and-tap tools will be supplied for each team. This tool shall be as manufactured by Mueller Co. (680539), Decatur, IL (217)254-7000, Salsar Co. (Super-Tuff 3/4"cc), Ocala, FL (800)782-5268, REED Manufacturing Company (DT 75, 3/4"-cc), and Erie, PA (814)452-3691.
- E-16.** Pipe to be tapped shall be AWWA C151, Class 52, 6" Ductile Iron Pipe, cement lined, capped on each end, pressurized and regulated to a pressure of 40-45 psi, by a suitable connection to the water supply.

JUDGING

- J-1.** The pipe tapping committee chair will be the Head Judge of the competition and must have five (5) years' experience in supervision in the field. The pipe tapping committee chair may appoint one of the officials as head official for the daily competition. The designated head official must also have five (5) years' experience in supervision and have extensive experience in pipe tapping procedures. The head official shall be in charge of the pipe tapping on the floor each day to make rulings as required by the circumstances for any penalties. If there is a disagreement between the head official and a team coach on any interpretation of the rules, the pipe tapping committee chair shall make the final ruling .
- J-2.** The number of teams for each round shall be limited to the space available for the competitors to perform adequately or to the number of officials available for each round.
- J-3.** The officials shall be responsible for timing the events with the head official being the one to announce the START and STOP of the event. Each competitor's time as recorded by the official, plus any penalties accrued, shall be used to determine the official time for each contestant. The head official shall be in charge of the competition and after consulting with the other officials of any infraction of the rules shall make the ruling as required by the circumstances for any penalties to be assessed.



J-4. The head official shall see that all tools, materials, and teams are in the required positions prior to starting the event. He/She shall also ensure the work area is free from any obstructions or spectators; this includes any standing water.

J-5. The officials shall watch for safety violations during the actual events and assess appropriate penalty times as required. During the time of the event not taken up by the actual competition, the officials shall see that all preparations for the event are accomplished in a safe manner.

J-6. No timing official will be assigned to a contestant who works for the same organization.

J-7. Squirting, continuous leaking connection spraying water on any other connection of the service line shall be covered appropriately with a towel or something to deter the water away from another connection while judging the next connection for leaks. If such measures are insufficient to block the flow of water to allow proper judging of the next joint, the connection may be tightened by the officials, at the head official's option, during the inspection, so that other joints will not be doused with water.

SAFETY

S-1. Standard water utility safety practices will be observed at all times during the competition.

S-2. Safety equipment required for all participants shall be:

- A.) Head protection for ALL team members (includes the coach) shall be worn during the event. The head protection (hard hats) shall conform to [American National Standard Safety Requirements for Industrial Head Protection \(Z89.1-1969\)](#). If a hard hat falls or is knocked off of a team member, the hat must be replaced on the team members head as soon as possible or a safety violation will be imposed. Head protection must be worn in accordance with manufacturer's recommendations, and is not to be worn backwards.
- B.) Eye protection (Glasses or Goggles) are required to be worn by ALL team members (includes the coach) during the pipe tapping contest. Eye protection must conform to [American National Standard for Occupational and Education Eye and Face Protection \(Z 87.1-1968\)](#).
- C.) Gloves are required to be worn by all three workers. The coach is exempt while performing coaching duties. Gloves shall be full-fingered and suitable for construction related tasks. Lab type gloves such as latex material and gloves without complete fingers are not acceptable for the contest. Sport gloves with full fingers are allowed.
- D.) Foot Protection shall be required to be worn by ALL team members (includes the coach) and shall conform to the [American National Standard for Men's Safety toe foot wear, \(Z41.1-1967\)](#). Sneakers and dress shoes that meet this standard are also allowed.



- E.)** Short sleeved shirts and long-legged trousers are required to be worn by all three workers during the event. No tanks or cutoff shirts, and no shorts are allowed. Long or short sleeved shirts with long-legged trousers only.

S-3. The host utility will provide hard hats and safety glasses for any competing team that did not bring their own equipment, however each team is encouraged to provide their own personal hard hats and safety glasses. Gloves, boots/shoes, short sleeved shirts, and long-legged trousers will be required to be provided by each team member.

S-4. During this contest, an ordinary task (tapping a distribution pipe) is performed in an extraordinary manner. Therefore, for this contest to be conducted safely, it is necessary for the yoke to be in place at all times during the use of the drilling, tapping, and inserting procedure as outlined in these rules. Failure to follow this procedure will be considered a safety violation PLUS TWO (2) PROCEDURAL VIOLATIONS (10+10+10=30 SECOND VIOLATION) AT THE DISCRETION OF THE HEAD OFFICIAL as stated in P-5. I.

S-5. Judges, Competitors, and/or Volunteers may not use, possess, or be under the influence of alcohol and/or illegal substances whilst performing duties related to the competition. Determination is at the discretion of the Pipe Tapping Competition Committee Chair.

PENALTIES

P-1. Various penalties will be assessed by the head official for any infraction of the rules as described herein or for any flagrant violation of normal safety practices.

P-2. The penalties will be in the form of a predetermined number of seconds added to the total time of the team's event time which will then be the OFFICIAL TIME of that event.

P-3. In the event of any disagreement with penalty decision, the head official's decision is final.

P-4. There will be NO INSTANT REPLAY allowed for reversing any decision after the head official has made a final determination of any infraction in these rules.

P-5. Penalties shall be (seconds):

- A.) Safety violation such as throwing of tools, PPE penalty, etc. (+10 each)
- B.) Procedural violation by any member of the team. This is a general penalty for actions of the team that may not specifically be covered in these rules, but are of sufficient gravity to the Judges as to warrant a penalty. (+10)
- C.) Leaking connection, barely oozing water and just discernable to the judges (+4 each)
- D.) Slow, obviously dripping connection (+6 each)
- E.) Squirting, continuous leaking connection (+8 each)



- F.) Curb stop too high above ground/floor and/or not vertical (4", + or – 10 degrees, see (+4 each)
- G.) Crimp in service line that will not pass 1/2" marble (+10 each)
- H.) More than four (4) threads showing on the inserted corp (+10)
- I.) YOKE PENALTY - shall be 10+10+10=30 (or less at the discretion of the Judges depending on the nature of the violation). Having the yoke slip off the bar accidentally and a member of the team immediately place the yoke back on the bar DOES NOT constitute a violation. (+30)

P-6. Teams without proper personal safety equipment as prescribed above will not be allowed to compete until they have obtained the proper personal safety equipment in a reasonable amount of time during the contest.

P-7. If the corporation stop blows out of pipe or any connection blows apart after time is stopped, the team is DISQUALIFIED for that tap.

SPONSORS

S-1. Requirements for pipe company sponsorship in the Pipe Tapping Contest.

The manufacturer must:

- A.) Be an associate member of AWWA.
- B.) Exhibit at ACE.
- C.) Be an active committee member (assist with the contest, attend the committee meeting at ACE) for two years prior to being approved to sponsor the event.
- D.) Be in business in North America for five years.