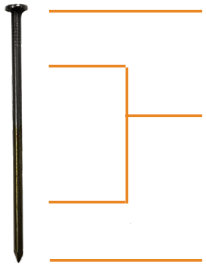
FASTENERS & TOOLS

# NAIL TYPES & TERMINOLOGY GUIDE

## 2025

*"Totally jobsite"*

# TERMINOLOGY



**HEAD**
Round metal peace formed at the top of the nail.

**SHANK**
The length of the nail between the bottom of head and the point. May be smooth or have rings, flutes or spirals for greater holding power.

**POINT**
Sharpened end opposite the head for greater ease in driving.

**GAUGE**
Reference how thick a nail is, with lower number indicating greater thickness.

**LENGTH**
Distance from the bottom of the head to the point of a nail.

**RIGIDITY**
The bending and shear resistance of a nail.

## COATINGS

**BRITE**
No coating to protect the nail from corrosion if exposed to high humidity or water, not recommended for exterior use or treated lumber, and only for interior applications where no corrosion is needed, i.e. interior trim, framing and finish.

**HEAT-TREATED**
Heated to extreme temperatures and then cooled quickly; this produces very hard steel that can be used with hardened materials such as concrete and masonry. This is still vulnerable to corrosion, and should be used in interior applications.

**PHOSPHATE-COATED**
Reduces friction during installation and increases corrosion protection. Produced by dipping in a solution of zinc or manganese acid phosphate; it has a dark grey finish that provides a surface that binds well with paint and joint compounds with minimal corrosion resistance. Most commonly found on drywall fasteners, not recommended for exterior and treated lumber.

**VINYL-COATED**
A slick vinyl coating helps ease driving of the fastener - when the fastener is driven, it's briefly heated by the friction and quickly cools down, hardening the vinyl coating; offers some extra holding power but does not protect the fastener from corrosion; recommended for interior applications where no corrosion protection is needed.

**ELECTRO-GALVANIZED**
Zinc plating process in which a layer of zinc is bonded to steel to protect against corrosion; smoth, shiny finish, which is generally used in areas where minimal corrosion protection is needed.

**GALVANIZED**
Coated with a protective layer of zinc for corrosion resistance and weather exposure.

**HOT-DIPPED GALVANIZED**
Most common method of galvanization where iron, steel or aluminum are coated with a thin zinc layer, by passing the metal through a molten bath of zinc that results in very high corrosion resistance suitable for some acidic and treated lumber; will corrode over time as the coating wears, but generall good for the lifetime of the application; typically used in outdoor locations - meets ASTM A153.

**STAINLESS STEEL**
Used where both the properties of steel and corrosion resistance are required; although stainless steel does not readily corrode, it isn't fully stain proof - certain conditions can and do affect it such as low oxygen, high salinity or poor circulation environments; 300 series stainless makes up 70% of all stainless used, and is the most corrosion resistant, ductile, and weldable type of stainless steel; these alloys are subject to crevice corrosion and pitting corrosion.

304/305 grade alloys are the most versatile and widely used of stainless steels - contains 18% chromium and 8% nickel; recommended for exterior applications where a higher level of corrosion reistance is desired.

316 (also called marine grade) has superior corrosion resistance versus other chromium-nickel steels when exposed to chemical corrodents such as sea water; slightly more nickel and the addition of 2% molybdenum is what makes 316 considerably more resistant to corrosion than the 304 family; recommended for marine environments.

# TERMINOLOGY

## COATINGS

### SMOOTH

Most common and often used for framing and general construction applications. They offer enough holding power for most everyday use.

### RING

Small directional rings on the shank prevent the nail from working back out once driven in. They also provide superior holding power over smooth shank nails because the wood fills in the crevice of the rings and provides friction to help prevent the nail from backing out over time.

### DRIVE-SCREW

Has helical shanks resembling a screw. Drive screw nails are mostly used with hardwood, providing greater holding power, and can sustain greater impact withdrawal work values than other nail forms do.

### FLUTED

Vertical thread to minimize cracking when driving into cinder block, mortar joints or other soft masonry applications.

## STEEL RIGIDITY

### REGULAR STEEL STOCK

Low to medium carbon content - standard type of wire used in fastener manufacturing.

### STIFF STOCK

Higher carbon content steel - harder and stiffer than regular stock to prevent bending when driven into hardwoods.

### TEMPERED HARDENED STEEL

Higher carbon content steel is used to make the nail, and then the nail is heat treated, which provides even better resistance to bending.

## COMMON NAIL SIZES

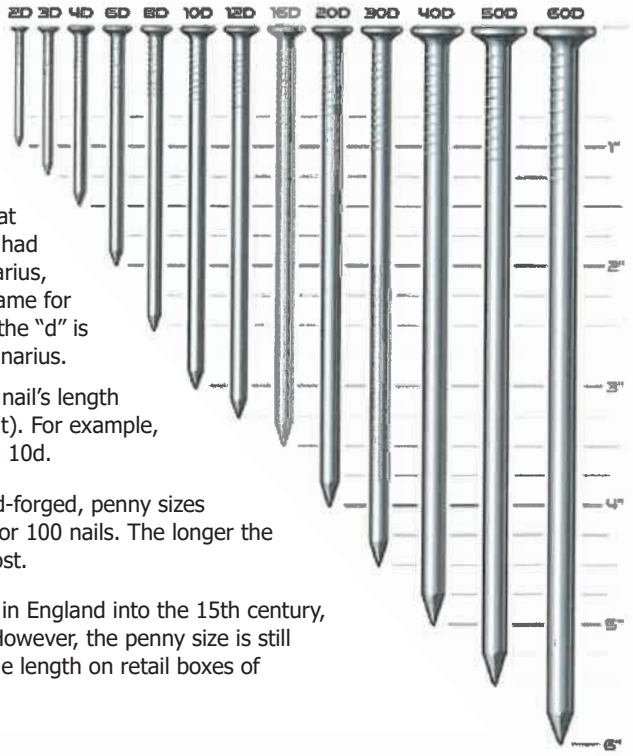
### What Does a Penny Mean?

The "d" when referring to nail sizes, stands for penny. When the Romans occupied what is now England, they had a coin called the denarius, which was also the name for an English Penny, so the "d" is an abbrevation for denarius.

The "d" indicates the nail's length (see table on the right). For example, a 3d is smaller than a 10d.

When nails were hand-forged, penny sizes referred to the price for 100 nails. The longer the nail, the higher the cost.

The system was used in England into the 15th century, but is now obsolete. However, the penny size is still included along with the length on retail boxes of nails today.

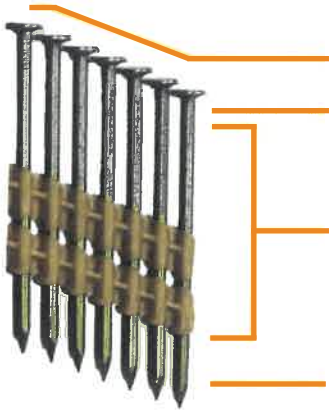



| Penny | Size (inches) | Length (mm) |
|---|---|---|
| 2d | 1 | 25 |
| 3d | 1-1/4 | 32 |
| 4d | 1-1/2 | 38 |
| 5d | 1-3/4 | 44 |
| 6d | 1-3/4 | 51 |
| 7d | 2 | 57 |
| 8d | 2-1/2 | 65 |
| 9d | 2-3/4 | 70 |
| 10d | 3 | 76 |
| 12d | 3-1/4 | 83 |
| 16d | 3-1/2 | 89 |
| 20d | 4 | 102 |
| 30d | 4-1/2 | 115 |
| 40d | 5 | 127 |
| 50d | 5-1/2 | 140 |
| 60d | 6 | 152 |

## GAUGE CHART

| Number of Gauge | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inch | .0365 | .2830 | .2625 | .2437 | .2253 | .2070 | .1920 | .1770 | .1620 | .1483 | .1350 | .1205 | .1055 | .0915 | .0800 | .0720 | .0625 | .0540 | .0475 | .0410 | .0328 |
| MM | 7.785 | 7.188 | 6.667 | 6.189 | 5.722 | 5.257 | 4.876 | 4.495 | 4.114 | 3.766 | 3.429 | 3.060 | 2.679 | 2.324 | 2.032 | 1.828 | 1.587 | 1.371 | 1.206 | 1.041 | 1.041 |

# TERMINOLOGY



**ANGLE**
The degree of collation.

**HEAD**
Round metal piece formed at the top of the nail

**SHANK**
The length of the nail between the head and the point.

**POINT**
Sharpened end opposite the head for greater driving ease.

**LENGTH**
Distance from the bottom of the head to the point of the nail.

**GAUGE**
References how thick a fastener is, with lower numbers indicating greater thickness.

**CROWN**
The width across the top of a staple.

**LEG**
The length of a staple from the top of the crown to the point.

## COATINGS

**BRITE**
No coating to protect the nail from corrosion if exposed to high humidity or water, not recommended for exterior use or treated lumber, and only for interior applications where no corrosion is needed, i.e. interior trim, framing and finish.

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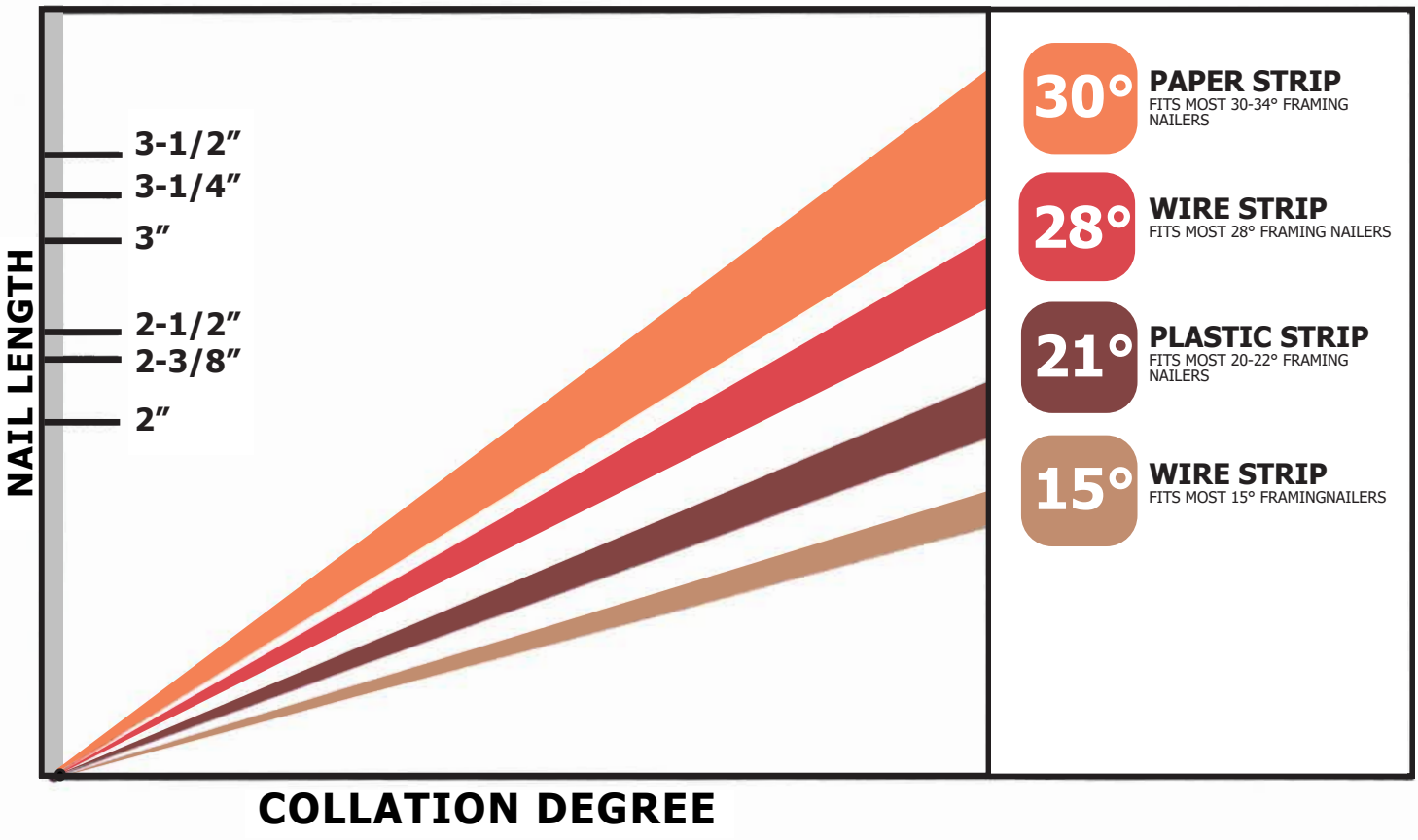
# TERMINOLOGY

**SAFETY REMINDER** - Nail guns can be dangerous, so safety precautions similar to those for a firearm are usually recommended. In September 2011 The Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) issued a nail gun safety guide that details practil steps to prevent injuries including use of tools with sequential triggers, training prior to use, and use of appropriate protective equipment. We encourage you to be aware of these precautions.

## GAUGE CHART

To determine the proper fastener length and degree, place your strip of nails on the chart below. Position the shank of the first nail over the grey line, with the nail point over the black dot in the lower left corner.




## GAUGE CHART

| Number of Gauge | 8 | 9 | 10 | 10¼ | 11 | 11½ | 12 | 12½ | 13 | 13½ | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inch | 0.162 | 0.148 | 0.135 | 0.131 | 0.120 | 0.113 | 0.105 | 0.099 | 0.091 | 0.086 | 0.080 | 0.072 | 0.062 | 0.054 | 0.047 | 0.041 | 0.035 | 0.032 | 0.028 | 0.025 |
| MM | 4.114 | 3.766 | 3.342 | 3.330 | 3.061 | 2.870 | 2.150 | 2.324 | 2.324 | 2.180 | 2.032 | 1.828 | 1.587 | 1.371 | 1.206 | 1.041 | 0.889 | 0.812 | 0.711 | 0.635 |

# TERMINOLOGY

## PLASTIC STRIP

Generally used for 20°-22° framing nails. They are held together by a strip of plastic that breaks apart when fired by a gun. They're often less expensive since they are easy to manufacture. They can become very brittle when cold, and the residual plastic must be disposed of. Pieces of plastic are sometmes left under the head, causing the nail to be exposed.

## WIRE STRIP

Generally used for 28° strip nails and 15° coil nails. Wire Strip fasteners use thin pieces of wire that run lengthwise to hold the fasteners in position. They're not as susceptible to water or cold weather as paper or plastic collated nails. However, the wire may fly off, and they are prone to having pieces of wire stuck under the head, exposing the nail.

## PLASTIC COIL

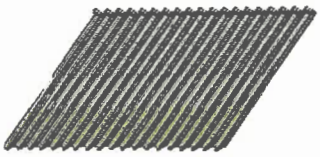
Generally used for 15°-90° coil nails. Fasteners are inserted into a plastic band. The band exits the coil nailer in one piece, eliminating pieces of the plastic stuck under the nail head when the nails is driven - making for easy cleanup. Plastic collation is a higher price alternative to plastic strip and is most commonly used for siding and applications where less reloading is desired.

## PAPER STRIP

Generally used for 30° - 34° framing nails. Fasteners are held together by a strip of paper with glue. The paper around the fastener is driven into the wood alongside the fastener. Paper tape reduces the risk of having material stuck under the nail head and leaving the top of the fastener exposed. They may easily break apart, and don't work well in wet or moist conditions since the nails can become loose.

## GLUE

Generally used for staples, brads, and floor cleats. The glue's only purpose is to hold the fasteners together while they are being driven. They offer no extra holding power after the fastener has been driven.



## TAPE

Generally used for finish nails. It's clear tape collation, a stretched polyester film that's very clean, stronger than glue and adds durability to longer strips.

# TERMINOLOGY

## HEADS

### BRAD HEAD
Smaller head allows nail to be concealed more easily; reduced holding power; used for finish and trim work.

### CLIPPED HEAD
Standard round-head nail on the front side, but the back of the head is clipped off flush with the shank of the nail. Nails can be placed close together, which facilitates les frequent loading. A specially coated paper strip applied to both sides of the clip keeps the nails in place. Some jurisdictions, especially in areas subject to sudden bursts of high wind, such as hurricanes, don't allow the sue of clipped head framing nails.

### ROUND HEAD
Heads are completely round, like standard hand-drive framing nails, and provide greater resistance to pull out. The nail strips are paper tape or plastic collated. Since the heads are fully round, a space must be maintained between the shanks, meaning that the collation wraps each nail rather than just being applied to the sides.

### OFFSET ROUND HEAD
Instead of the head being centered on the shank, the head is offset to one side, which allows the shanks to touch one another when collated. These heads are designed to be fired in a clipped-head nailer, effectively turning a clipped head into a round-head nailer.

## SHANKS

### SMOOTH
Most common and often used for framing and general construction applications. They offer enough holding power for most every day use.

### DRIVE SCREW
Has helical shanks resembling a screw. Drive screw nails are mostly used with hardwood, provide greater holding power, and can sustain greater impact withdrawal work values than other nail forms do.

### RING
Small directional rings on the shank prevent the nail from working back out once riven in. They also provide superior holding power over smooth shank nails because the wood fills in the crevice of the rings and provides friction to help preven tthe nail from backing out over time. Often used in softer types of wood where slipping isn't an issue.

## POINTS

### DIAMOND POINT
A 4-sided pyramid; most common point.

### BLUNT DIAMOND POINT
Rounded diamond point to drive easier than a blunt nail without splititing

### BLUNT POINT
Reduces the chance of splittnig wood, but is more difficult t o drive.

prime

FASTENERS & TOOLS

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