

# Sep



# AGC

THE CONSTRUCTION  
ASSOCIATION

# 2021

# CONSTRUCTION INFLATION ALERT

In late March, the Associated General Contractors of America (AGC) posted the Construction Inflation Alert, a document to inform project owners, government officials, and the public about the extreme cost increases and supply-chain disruptions affecting construction. The current version is the fourth update of that Alert—a reflection of the continued volatility in materials costs, as well as lengthening lead times for both production and deliveries.

Although the overall economy has strengthened significantly in the past few months and appears to be headed for further growth, the construction industry has experienced a much more uneven recovery. Lagging demand for numerous types of nonresidential construction is keeping many contractors from passing on their added costs. The delta variant of Covid-19 has disrupted production and delivery of goods, labor availability, and owners' demand for projects. This combination of supply chain bottlenecks, steeply rising costs, and much smaller bid price increases threatens to push some firms out of business.

This report is intended to provide all parties with better understanding of the current situation, the impact on construction firms and projects, its likely course in the next several months, and possible steps to mitigate the damage. The document will be revised to keep it timely as conditions change; download it at [AGC Construction Inflation Alert | Associated General Contractors of America](#).

Please send comments and feedback to AGC of America's chief economist, Ken Simonson, [ken.simonson@agc.org](mailto:ken.simonson@agc.org).

[www.agc.org](http://www.agc.org)

# Rising costs, flat project pricing

Figure 1 illustrates the threat. The red line (“Input costs”) shows the change from April 2020—the low point—to August 2021 in the price of all materials and services used in construction, while the blue line (“Bid prices”) measures the far smaller change in what contractors say they would charge to erect a set of nonresidential buildings. This latter line, essentially a measure of bid prices, rose 5.2% over 16 months. In contrast, the line measuring the cost of contractors’ purchases soared 27.4% over the same interval.

In other words, if a contractor or subcontractor submitted a fixed-price bid in April 2020 based on materials costs at that time but did not buy the materials until this summer, its cost for the materials would have risen an average of more than 27%. Given that materials may account for half or more of the cost of a contract, such an increase could easily wipe out the profit from a project and potentially put the contractor out of business.

# 28%

Input costs for construction soared 28% from April 2020 to August 2021

**FIGURE 1**

**Change to construction inputs and bid prices**  
April 2020- August 2021



Source: Bureau of Labor Statistics, producer price indexes (PPIs) for new nonresidential building construction (bid prices) and inputs to construction, not seasonally adjusted

In fact, Figure 1 understates the severity of the current situation for many contractors, in two respects. First, the two lines are calculated from producer price indexes (PPIs) posted monthly by the Bureau of Labor Statistics (BLS). The most recent PPIs are based on prices BLS collected around August 11.

Since then, additional price increases have taken effect or been announced by producers of a variety of materials. Notably, prices of some steel and aluminum products have continued to set new records. Prices have also increased for numerous plastic resins and products. Various cement and concrete suppliers have implemented or announced increases. Freight or fuel surcharges are becoming more common.

Since BLS collected prices for the August PPIs, retail diesel fuel prices increased to \$3.385 per gallon as of September 20, 41% higher than a year earlier and the highest level in nearly three years. Those increases affect contractors directly in the cost of fuel for their offroad equipment and trucking fleets. In addition, fuel surcharges are likely to go up on deliveries of materials and equipment, and hauling away of dirt, debris, and equipment from construction sites.



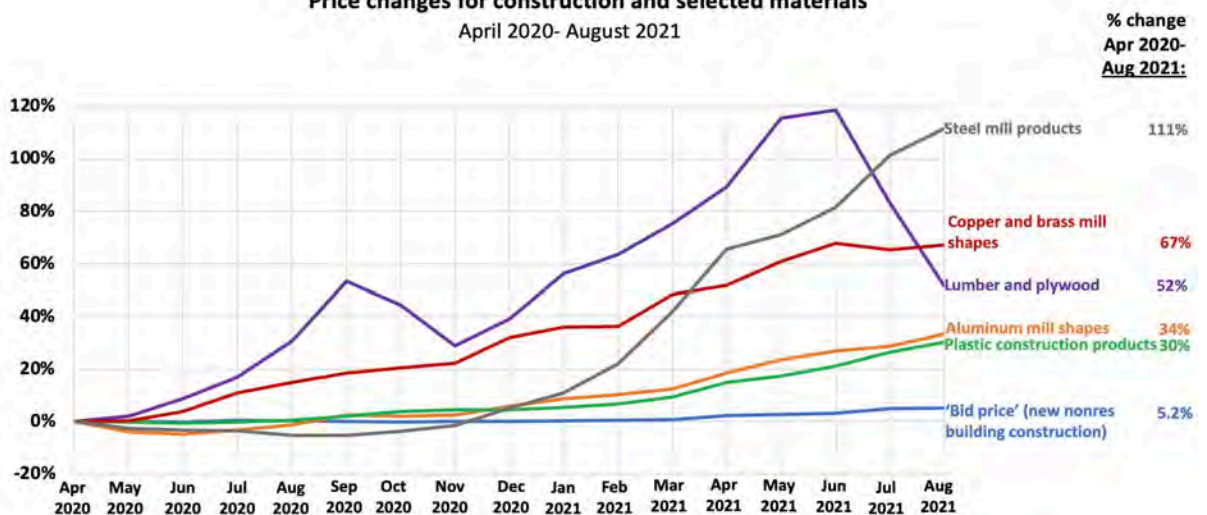
Second, many projects or subcontractors' packages are heavily weighted toward materials that have risen even more in price than the overall PPI for inputs. Figure 2 shows the change in PPIs from April 2020 to August 2021 for five widely used materials. The index for steel mill products 3more than doubled, rising 111%. The PPI for copper and brass mill shapes soared 67%; aluminum mill shapes, 34%; and plastic construction products, 30%. Thus, contractors whose purchases are weighted toward any of these broad classes of materials are likely to have experienced even greater total increases in costs than the overall PPI for inputs suggests.

The PPI for lumber and wood products declined sharply from June to August. Nevertheless, the increase from April 2020 to August 2021 totaled 52%. Furthermore, the futures price of lumber on the New York Mercantile Exchange jumped again in mid-September, underscoring the volatility of many commodities.

**111%**  
The price index for steel mill products jumped 111% from April 2020 to August 2021

**FIGURE 2**

**Price changes for construction and selected materials**  
April 2020- August 2021



Source: Bureau of Labor Statistics, producer price indexes (PPIs) for new nonresidential building construction (bid prices), gypsum products, wood, metal products, and plastic products, not seasonally adjusted

**5.2%**  
The price index for contractors' "bid prices" rose only 5.2% from April 2020 to August 2021

Even material prices that have not jumped as much as the 27% increase in the overall PPI for construction inputs have nevertheless risen far more than contractors' bid prices. For instance, the PPI for gypsum products rose 22% from April 2020 to August 2021 and indexes for truck transportation of freight, insulation materials, and asphalt felt and coatings all climbed 15-17%.

Price declines at the producer level may not show up at the local distributor level or the construction site to the same degree, or with predictable timing. As noted, the rising cost of trucking may negate some of the cost savings at the mill. And the price in any one locality will depend on current demand, inventories and expected supply.

Furthermore, there is no assurance that recent price decreases will last. Lumber prices plummeted from then-record highs in September 2020 to November before reversing course and rising to new heights for the next six months. While lumber prices appear unlikely to exceed their May 2021 peak, it is also unlikely that most commodities will soon drop below their April 2020 lows.

# Supply-chain issues

Extended and uncertain delivery times for construction items have been an even bigger problem for many contractors than the extreme price increases. Currently, there are delays at every stage of the supply chain.

A leading supplier of building siding materials told customers that it would not accept new contracts for multifamily projects from July 1 until November 1. Contractors have reported being told they cannot get bar joists for 11-12 months. Roofing contractors have been quoted production lead times for various roofing materials ranging from four to eight months, with uncertain availability of fasteners and other essential items. Respondents to a survey conducted by AGC of California reported lead times of “16 weeks to unknown” for items as diverse as lockers, glass, structural steel detailing, ductile iron fittings and other pipe material, insulation, aluminum extrusion, signal poles, and airfield lighting. The global shortage of computer chips affects not just cars but also trucks used in construction, construction and communications equipment, and “smart” tools.

Plant or transportation breakdowns that would normally have caused only tight supplies, inventory drawdowns, or localized shortages have had much wider consequences this year. One widespread and long-lasting example has been the impact on construction plastics from the freeze in Texas in February. The freeze and losses of power and water damaged or completely shut down all of the plants that supply the raw materials for all construction plastics. In addition, the freeze burst thousands of polyvinyl chloride (PVC) water pipes, thereby adding to demand. More recently, supplies of a key ingredient of PVC have been disrupted by Hurricane Ida, which knocked out power for weeks to chlor-alkali plants in southeast Louisiana.

A very wide array of construction products is made from plastic, resins, or other affected ingredients. These include PVC and fiberglass pipe and plumbing fixtures; vinyl siding and moisture barriers; acrylic and other paints, coatings, and highway marking material; geotextiles; roofing and insulation materials; adhesives and “glues” for the layers and particles of engineered wood products such as plywood, oriented strand board, and I-joists; wraps and packaging; and more. All of these products are vulnerable to supply disruptions and to the rising price and tight supplies of natural gas, which is used as both fuel and feedstock. Natural gas futures prices doubled from March to September, and inventories are much lower heading into the prime winter consuming months than they have been for several years.

Other unplanned outages that affect construction have occurred at plants producing cement, semiconductors, and steel. Meanwhile, little new capacity has been added as producers struggle to get back to previous levels of capacity utilization.

In addition to increased costs and lead times, contractors are experiencing delivery times that have stretched or become completely unreliable. These problems have shown up all along the delivery chain

Producers in Asia and Europe reportedly cannot get enough containers or berths on containerships to send their products to the United States. Separate outbreaks of Covid-19 caused shutdowns at two of the world’s largest containership ports in China, disrupting the flow of ships and containers in both directions.

Ports are backed up, forcing ships to wait offshore for days before unloading. As many as 65 containerships, with several hundred thousand containers, were off the coast of California in mid-September, waiting for berths because the ports of Los Angeles and Long Beach were jammed with containers that had yet to move inland. Shortages of truck drivers and rail cars or train crews mean that containers sit on quays for many days longer than usual. Those shortages are also keeping domestically produced goods from leaving fabrication or storage locations on a timely basis.

As with unplanned factory shutdowns, interruptions in the global transportation network can take their toll on deliveries. The six-day blockage of the Suez Canal exacerbated shortages and delays for containers and ships from Asia and Europe. The unexpected shutdown of the Colonial Pipeline disrupted supplies of diesel fuel as well as gasoline. Massive wildfires in western states and British Columbia have interfered with logging, sawmills, and transport of logs and wood products.

In the face of such volatility and uncertainty, many producers are drastically shortening how long they will hold their prices. This is very problematic for contractors, who must typically guarantee a price to an owner long before placing a firm order for materials. Some contractors report receiving price-increase notices from steel producers the day after they took effect. Others have been told they won't be quoted a price for lumber until it is loaded on a truck for shipment to the contractor.

## Not a short-term problem

Some might assume contractors will simply raise their prices to cover the added costs. But current conditions in the industry, as well as the record from previous episodes of escalating materials costs, suggest that the mismatch between materials costs and contractors' prices is likely to persist for an extended period.

The pandemic has caused current production and delivery of many materials to fall short of demand. Initially, a wide range of factories, mills, and fabrication facilities were shut down on their owners' initiative or because government orders deemed them to not be "essential." In some cases, contractors—particularly homebuilders—canceled orders because they no longer saw demand for construction. Once production facilities were allowed to re-open, many of them had trouble getting up to full capacity because their own workers or those of their suppliers and freight haulers may have been ill, quarantined, or required to care for family members at home.

Imported products and components also were subject to production and shipping shutdowns in the early months of the pandemic. This particularly affected many products from China and northern Italy, ranging from kitchen cabinets and appliances to tile flooring to elevators. In recent months, production has increased but containers, ships, port space, and trucking capacity have all experienced bottlenecks that have slowed deliveries.

Dramatic shifts in demand triggered partly by the pandemic have added to price pressures and shortages of goods. Single-family housing starts leaped 24% in the first eight months of 2021 from year-earlier levels, creating huge additional demand for wood products and other items that are also used in nonresidential construction. Restaurants that installed decks and railings for outdoor dining, along with offices and other buildings undergoing remodeling, added to demand for these products.

# 24%

Housing starts leaped 24% in January-August 2021 from the same months in 2020

Yet another cause of higher prices and tighter supply is trade policy actions imposed in 2018-2020. Tariffs or quotas on steel and aluminum from many countries, along with tariffs on hundreds of parts and materials from China, drove up the cost of many construction products and limited the number of suppliers, which has led to longer delivery times. Failure to renew a longstanding softwood lumber agreement with Canada has added to lumber costs.

Although the ostensible purpose of some of the trade actions was to protect and create jobs in the U.S. manufacturing sector—steel in particular—very little capacity has been added so far. Many manufacturers merely raised their prices in tandem with the imposition of tariffs.

## PAST EPISODES

The construction industry has endured previous spells of rapid cost escalation. For instance, the PPI for goods used in construction accelerated from a 3.6% year-over-year rate of increase in January 2004 to 10.0% by October of that year and remained above a 5% annual rate for a total of 31 months, before subsiding to a 3.2% rate in October 2006.

Less than a year later, materials costs soared again, rising from a 1.6% annual growth rate in August 2007 to 12.9% in September 2008. The financial crisis that autumn brought rates down rapidly but, again, only for about a year. The inflation rate for materials spiked from 0.4% year-over-year in December 2009 to 5.8% the following April and remained above or close to 4% until early 2012.

While each of these price spikes eventually subsided, they caused enormous harm to contractors, who generally were not able to pass along the increases for an extended period. Not only were firms that had already signed contracts to deliver a project at a fixed price caught by the increases, but competition kept contractors from raising their bids to match the increases for a year or longer. A comparison of the year-over-year change in the PPI for materials with the PPIs for five types of new nonresidential buildings shows there are periods as long as 28 consecutive months with such price disparities. That is, contractors' bid prices rose less—or decreased—relative to the cost of the goods they purchased. For the most part, these months coincided with periods in which the value of nonresidential construction was stagnating or shrinking.

# 28 months

Increases in material costs have outpaced bid prices for as long as 28 months

Figure 3 illustrates the gap. The areas in red indicate periods in which the year-over-year change in the PPI for inputs to construction exceeded the PPI for new nonresidential building construction (specifically, warehouses). Similar periods exist for the other new-construction “bid price” indexes: the PPIs for new school, office, industrial and healthcare buildings.

**FIGURE 3**

### Cost squeeze on contractors can last two years or more

Difference between year-over-year change in materials costs vs. bid prices, Jan 2006-August 2021



Source: Bureau of Labor Statistics, [www.bls.gov/ppi](http://www.bls.gov/ppi), producer price indexes for goods inputs to nonresidential construction (material costs) and new warehouse construction (bid prices)



# CURRENT DEMAND FOR CONSTRUCTION

The construction market currently is marked by a huge gap between residential and nonresidential activity. Private nonresidential construction spending—comprising new single- and multifamily structures along with additions and renovations to owner-occupied housing—jumped 26% in the first seven months of 2021 compared to January-July 2020. Private nonresidential construction spending slid 8% during that span.

Employment data show a similar story. Both residential and nonresidential construction employment plunged by 14-15% from February to April 2020. But by September 2021, employment among residential building and specialty trade contractors had rebounded to a higher level than in February 2020, immediately before the pandemic struck. In contrast, nonresidential construction firms—building, specialty trade, and heavy and civil engineering contractors—added back barely half of the employees they lost between February and April 2020.

Both of these datasets—spending and employment—indicate that the overall market for nonresidential construction remains weak, even though certain project types and geographic areas are hot. Thus, many contractors are forced to absorb cost increases in order to win the remaining projects that are available to bid on in their specialty or region.

**-8%**

Private nonresidential construction spending fell 8% in January-July 2021 from 2020

## What can contractors and owners do?

While contractors cannot unplug ports or rescind tariffs, they can provide project owners with timely and credible third-party information about changes in relevant material costs and supply-chain snarls that may impact the cost and completion time for a project that is underway or for which a bid has already been submitted.

Owners can authorize appropriate adjustments to design, completion date, and payments to accommodate or work around these impediments. Nobody welcomes a higher bill, but the alternative of having a contractor go out of business because of impossible costs or timing is likely to be worse for many owners.

For projects that have not been awarded or started, owners should start with realistic expectations about current costs and the likelihood of increases. They should provide potential bidders with accurate and complete design information to enable bidders to prepare bids that minimize the likelihood of unpleasant surprises for either party.

Owners and bidders may want to consider price-adjustment clauses that would protect both parties from unanticipated swings in materials prices. Such contract terms can enable the contractor to build in a smaller contingency to its bid, while providing the owner an opportunity to share in any savings from downward price movements (which are likely at some point, particularly for long-duration projects). The ConsensusDocs set of contract documents ([www.consensusdocs.org](http://www.consensusdocs.org)) is one source of industry-standard model language for such terms. The ConsensusDocs website includes a price escalation resource center (<https://www.consensusdocs.org/price-escalation-clause/>).

The parties may also want to discuss the best timing for ordering materials and components. Buying items earlier than usual can provide protection against cost increases. But purchase before use entails paying sooner for the items; potentially paying for storage, security against theft and damage; and the possibility of design changes that make early purchase unwise.

# Conclusion

The construction industry is in the midst of a period of exceptionally steep and fast-rising costs for a variety of materials, compounded by major supply-chain disruptions and stagnant or falling demand for projects—a combination that threatens the financial health of many contractors. No single solution will resolve the situation, but there are steps that government officials, owners, and contractors can take to lessen the pain.

Federal trade policy officials can act immediately to end tariffs and quotas on imported products and materials. With many U.S. mills and factories already at capacity, bringing in more imports at competitive prices will cool the overheated price spiral and enable many users of products that are in short supply to avoid layoffs and shutdowns.

Officials at all levels of government should review all regulations, policies, and enforcement actions that may be unnecessarily driving up costs and slowing importation, domestic production, transport, and delivery of raw materials, components, and finished goods.

Owners need to recognize that significant adjustments are probably appropriate regarding the price or delivery date of projects that were awarded or commenced early in the pandemic or before, when conditions at suppliers were far different. For new and planned projects, owners should expect quite different pricing and may want to consider building in more flexibility regarding design, timing, or cost-sharing.

Contractors need, more than ever, to closely monitor costs and delivery schedules for materials and to communicate information with owners, both before submitting bids and throughout the construction process.

Materials prices do eventually reverse course. Owners and contractors alike will benefit when that happens. Until then, cooperation and communication can help reduce the damage.

**No single or simple solution will resolve the situation, but there are steps that government officials, owners, and contractors can take to lessen the pain**





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# Data Digest

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## Construction employment rises in September; construction executives' optimism cools, ENR finds

**Construction employment**, seasonally adjusted, totaled 7,447,000 in September, an increase of 22,000 from August, according to AGC's [analysis](#) of Bureau of Labor Statistics (BLS) data [posted](#) on Friday. The September total was 201,000 (-2.6%) below the pre-pandemic peak in February 2020. **Residential construction employment**, comprising residential building and specialty trade contractors, increased by 3,400 in September, putting the total 80,000 (2.7%) higher than in February 2020. **Nonresidential construction employment**—building, specialty trades, and heavy and civil engineering construction—rose by 18,600 following five declines in a row, putting the total 281,000 (-6.0%) below the February 2020 level. Nonresidential employment has regained only 56% of the jobs it lost between February and April 2020, compared to 78% for total nonfarm payroll employment and 117% for residential construction. A total of 444,000 former construction workers were unemployed in September, down 37% year-over-year (y/y) from September 2020. The industry's **unemployment** rate in September was 4.5%, not seasonally adjusted, compared to 7.1% in September 2020 and the third-lowest September rate in the 22-year history of the series. (The only lower September rates were in 2018, 4.1%, and 2019, 3.2%.) **Average hourly earnings in construction** totaled \$33.25 in September, seasonally adjusted, an increase of 4.5% y/y and a premium of 7.8% over the average for the nonfarm private sector (\$30.85, up 4.6% y/y). In September 2018, the construction premium was 10.5%. The premium has declined as historically low-wage employers such as restaurants and warehouses raise starting pay.

“Worries over price inflation and persistent labor shortages have cooled optimism among construction executives, but overall confidence in the market remains strong, [as] can be seen in results of the latest ENR Construction Industry Confidence Index,” [Engineering News-Record](#) reported on September 27. “The Index dropped [following a record] gain in Q2 [the second quarter of 2021 but] remains at its second-highest level” since Q3 2018. “The measure is based on responses by industry executives to surveys sent between August 9 and September 20 to U.S. companies on ENR’s lists of leading general contractors, subcontractors, and design firms.... Execs remain confident in the economy in the short term, but doubts have crept in about the medium term. Only 14% consider the current U.S. economy to be in decline, but that number jumps to 24% when considering the outlook in 12-18 months. Individual market segments have stayed strong,” including distribution/warehouses, hospitals/health care, transportation, multi-unit residential, industrial/manufacturing, and water/sewerage. “The most notable drop was in the entertainment/theme parks/cultural market.”

**Roofing materials**, including “roof insulation, insulation and membrane fasteners, some membrane products and roof accessory products continue to be in short supply,” the National Roofing Contractors Association wrote in a September “Industry Issue Update.” “Manufacturers are reporting anticipated lead times for fulfilling newly placed orders for some materials and products of four months or more with some large orders having lead times as long as 12 months.... recently, several manufacturers have instituted new policies basing pricing at the time of shipment instead of at the time the order is placed. This puts roofing contractors in the position of not having actual material and product pricing at the time of offering a proposal or bid and entering into a contract with a building owner.... in the aftermath of Hurricane Ida, ... roofing manufacturers have been faced with declarations for force majeure regarding supply contracts and shipments from raw material providers. These include MDI, steel rods used in the manufacturing of fasteners, glass mats used in asphalt shingles and some roof membranes, and some specialty chemicals used in a variety [of] roofing products.... NRCA expects the current situation of roofing material and product shortages, long lead times and significant price volatility to continue through 2022.” More recently, on October 4, Firestone Building Products announced a **price increase for roofing membranes** of “up to 15%,” effective on or after October 15, with additional price increases of 10% effective January 1, 2022. The reader who sent this notice also sent one from Sika Sarnafil that included a 10% surcharge effective October 11, plus additional increases of 10-25%, effective January 1. The reader added, “We have received similar letters from all manufacturers with price increases of 10%-30% for material delivered in Q1 2022.” Readers are invited to **send price and supply-chain information** to [ken.simonson@agc.org](mailto:ken.simonson@agc.org).

**Price increases are continuing for raw materials for selected construction inputs.** “U.S. crude rose more than 2% early Monday to a seven-year high of \$81.50 a barrel, bringing its climb since the end of last October to more than 120%,” the [Wall Street Journal](#) reported online today. “Copper prices are about 10% below a May record” but “U.S. natural-gas futures on Oct. 5 hit a nearly 13-year high at \$6.31 a million British thermal units, bringing their advance for the year to almost 150% [before] a recent retreat” to close at \$5.57 on Friday.

Market data collected in August by analytics firm EquipmentWatch “found the average age of **construction equipment** has risen 12% in resale and 14% in auctions,” [ENR](#) reported on September 27. “While scarcity is not at a crisis point, [Heather Messing, the firm’s analytics lead] does expect strong resale and auction pricing to continue as equipment manufacturers struggle to overcome supply-chain issues. ‘I haven’t heard [original equipment manufacturers] saying that their supply chains will straighten themselves out, so it’s hard to make the argument that there will be a return to normal pre-pandemic [pricing] levels any time soon.’”