The textile artist Sheila Hicks will wrap vibrant fibers around flexible aluminum pipes that will be installed on the High Line in Manhattan.

“You feel like you could lift up from the gravity of Manhattan,” said the artist Sheila Hicks, responding to the open vista and ballet of cranes at the northern end of the High Line where the elevated park wraps around the future Hudson Yards. There, along the curve of the old train tracks, Ms. Hicks, 83, will install more than 650 feet of riotously costumed tubing that twists, twirls and somersaults in the self-seeded landscape.

The work, “Hop, Skip, Jump and Fly: Escape From Gravity,” to be completed by the end of May, is her first major outdoor public art commission in the United States. It will be on display through next March.

Ms. Hicks, an American artist who has lived in Paris since 1964, is known for using traditional textile methods on a monumental scale, often in relationship to architecture. For the Venice Biennale opening May 13, she has covered a dilapidated 50-foot brick wall in the Arsenale with an immensely colorful stacked sculpture in fiber, what she called “building a safety net in the chromatic zone.”

On the High Line, Ms. Hicks will be wrapping weather-husky fibers in some 75 vibrant hues around lengths of flexible aluminum pipe that will interact in space. “It is almost like a sentence spelled out with these beautiful colorful lines,” said Cecilia Alemani, curator of the High Line.

Ms. Hicks’s next outdoor piece will be installed in October in the gardens of Versailles.