The I2C protocol knows about two kinds of device addresses: normal 7 bit addresses, and an extended set of 10 bit addresses. The sets of addresses do not intersect: the 7 bit address 0x10 is not the same as the 10 bit address 0x10 (though a single device could respond to both of them). You select a 10 bit address by adding an extra byte after the address byte:

  S Addr7 Rd/Wr ....

becomes

  S 11110 Addr10 Rd/Wr

S is the start bit, Rd/Wr the read/write bit, and if you count the number of bits, you will see the there are 8 after the S bit for 7 bit addresses, and 16 after the S bit for 10 bit addresses.

WARNING! The current 10 bit address support is EXPERIMENTAL. There are several places in the code that will cause SEVERE PROBLEMS with 10 bit addresses, even though there is some basic handling and hooks. Also, almost no supported adapter handles the 10 bit addresses correctly.

As soon as a real 10 bit address device is spotted 'in the wild', we can and will add proper support. Right now, 10 bit address devices are defined by the I2C protocol, but we have never seen a single device which supports them.