ALG230526-001 Rev01 Surface Algorithm

```
                          ( Start )
                             |
          ┌──────────────────────────────────────┐
          │  1.   Check safe_z above surface       │
          │  2.   Check step > tool dia            │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │            Write start block          │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │            Read entry point           │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │  Initialize:                          │
          │    1.   start_x                       │
          │    2.   start_y                       │
          │    3.   Length_y                      │
          │    4.   Last cut flag                 │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │            Go to start point          │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │    Set to G91 (incremental            │
          │         positioning)                  │
          └──────────────────────────────────────┘
                             |
          ┌──────────────────────────────────────┐
          │          Go to starting corner        │
          └──────────────────────────────────────┘
                             |
                    < first pass? >
```

- first pass? — yes → Entry = bottom_right?
- first pass? — no → Decrement length_x

- Entry = bottom_right? — yes → Decrement length_x
- Entry = bottom_right? — no → Entry = bottom_left?

- Decrement length_x → length <= 0?
  - length <= 0? — yes → Finish last segment → End
  - length <= 0? — no → Move cutter to bottom left corner. i.e. cut bottom length

- Entry = bottom_left? — yes → Decrement length_y
- Entry = bottom_left? — no → Entry = top_left?

- Decrement length_y → length <= 0?
  - length <= 0? — yes → Finish last segment → End
  - length <= 0? — no → Move cutter to top left corner. i.e. cut left length

- Entry = top_left? — yes → Decrement length_x
- Entry = top_left? — no → Entry = top_right?

- Decrement length_x → length <= 0?
  - length <= 0? — yes → Finish last segment → End
  - length <= 0? — no → Move cutter to top right corner. i.e. cut top length

- Entry = top_right? — yes → Decrement length_y

- Decrement length_y → length <= 0?
  - length <= 0? — yes → Finish last segment → End
  - length <= 0? — no → Move cutter to bottom right corner. i.e. cut left length

Move cutter to bottom right corner. i.e. cut left length → (loops back to first pass?)