Table 4. Experiment set-up and results.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Exp.no** | **Config.** | **Grav. accell. [G]** | **Proj type and diameter**  **[mm]** | **Lower target layer** | **Upper target layer and thickness (H)**  **[mm]** | **U**  **[ms-1]** | **h**  **[mm]** | **D [mm]** | **h/D** | **Drim**  **[mm]** | **h/Drim** | **Din**  **[mm]** | **Din/D** | **Dt**  **[mm]** | **ht**  **[mm]** | **ht/Dt** | **Dt, in** | **Dt, in/Dt** | **Time at Dt**  **[s]** |
| Boeing\_9434 | HS | 10 | Polyethylene, cylindrical, 12 | Chromite | Quartz sand, 5 | 1824 | 13.5 | 117.5 | 0.11 | 145 | 0.09 | 95 | 0.809 | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_9191 | HS | 50 | Polyethylene, cylindrical, 12 | Chromite | Quartz sand, 5 | 1774 | 10.8 | 89.2 | 0.12 | 119 | 0.09 | 69 | 0.774 | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_9035 | HS | 150 | Polyethylene, cylindrical, 12 | Chromite | Quartz sand, 5 | 1800 | 13.5 | 82 | 0.16 | 101 | 0.13 | 60 | 0.732 | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_9433 | HS | 500 | Polyethylene, cylindrical, 12 | Chromite | Quartz sand, 5 | 1720 | 11.6 | 72 | 0.16 | 88 | 0.13 | 48.5 | 0.674 | n/a | n/a | n/a | n/a | n/a | n/a |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Boeing\_8905 | HS | 10 | Polyethylene, cylindrical, 12 | Quartz sand | n/a | 1766 | 20.1 | 145 | 0.14 | 190 | 0.11 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_8904 | HS | 51 | Polyethylene, cylindrical, 12 | Quartz sand | n/a | 1780 | 16.2 | 112.5 | 0.14 | 151 | 0.11 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_8902 | HS | 150 | Polyethylene, cylindrical, 12 | Quartz sand | n/a | 1754 | 16.6 | 97.5 | 0.17 | 125 | 0.13 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Boeing\_8903 | HS | 502 | Polyethylene, cylindrical, 12 | Quartz sand | n/a | 1966 | 15.5 | 79.2 | 0.20 | 107 | 0.14 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EPIC\_03 | QS | 1 | Delrin, 20 | Iron grit | n/a | 414 | 42 | 223 | 0.19 | 296 | 0.14 | n/a | n/a | 217 | 45 | 0.21 | n/a | n/a | 0.089 |
| EPIC\_04 | QS | 1 | Delrin, 20 | Iron grit | Beach sand, 8 | 419 | 42 | 263 | 0.16 | 373 | 0.11 | 226 | 0.86 | 236 | 43 | 0.18 | 226 | 0.9576 | 0.089 |
| EPIC\_05 | QS | 1 | Delrin, 20 | Iron grit | Beach sand, 11 | 421 | 39 | 282 | 0.14 | 356 | 0.11 | 227 | 0.81 | 250 | 38 | 0.15 | 214 | 0.8560 | 0.102 |
| EPIC\_06 | QS | 1 | Delrin, 20 | Iron grit | Beach sand, 19 | 410 | 42 | 278 | 0.15 | 350 | 0.12 | 193 | 0.69 | 277 | 43 | 0.16 | 196 | 0.7076 | 0.092 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24\* | QS | 1 | Delrin, 20 | Beach sand | n/a | 410 | 81 | 355 | 0.23 | 433 | 0.19 | n/a | n/a | 339 | 84 | 0.25 | n/a | n/a | 0.115 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

\*Reference shot in beach sand obtained from Ormö et al. (2015)

HS = Half space QS = Quarter space

U = projectile velocity (inferred from linear regression between velocity and pressure for reference experiments for which this data was measured, c.f. Ormö et al. (2015).

h = Apparent crater depth Drim = Final crater rim crest-to-rim crest diameter Dt = Transient crater diameter Dt, in = Transient inner crater diameter

D = Apparent crater diameter Din = Apparent inner crater diameter ht = Transient crater depth